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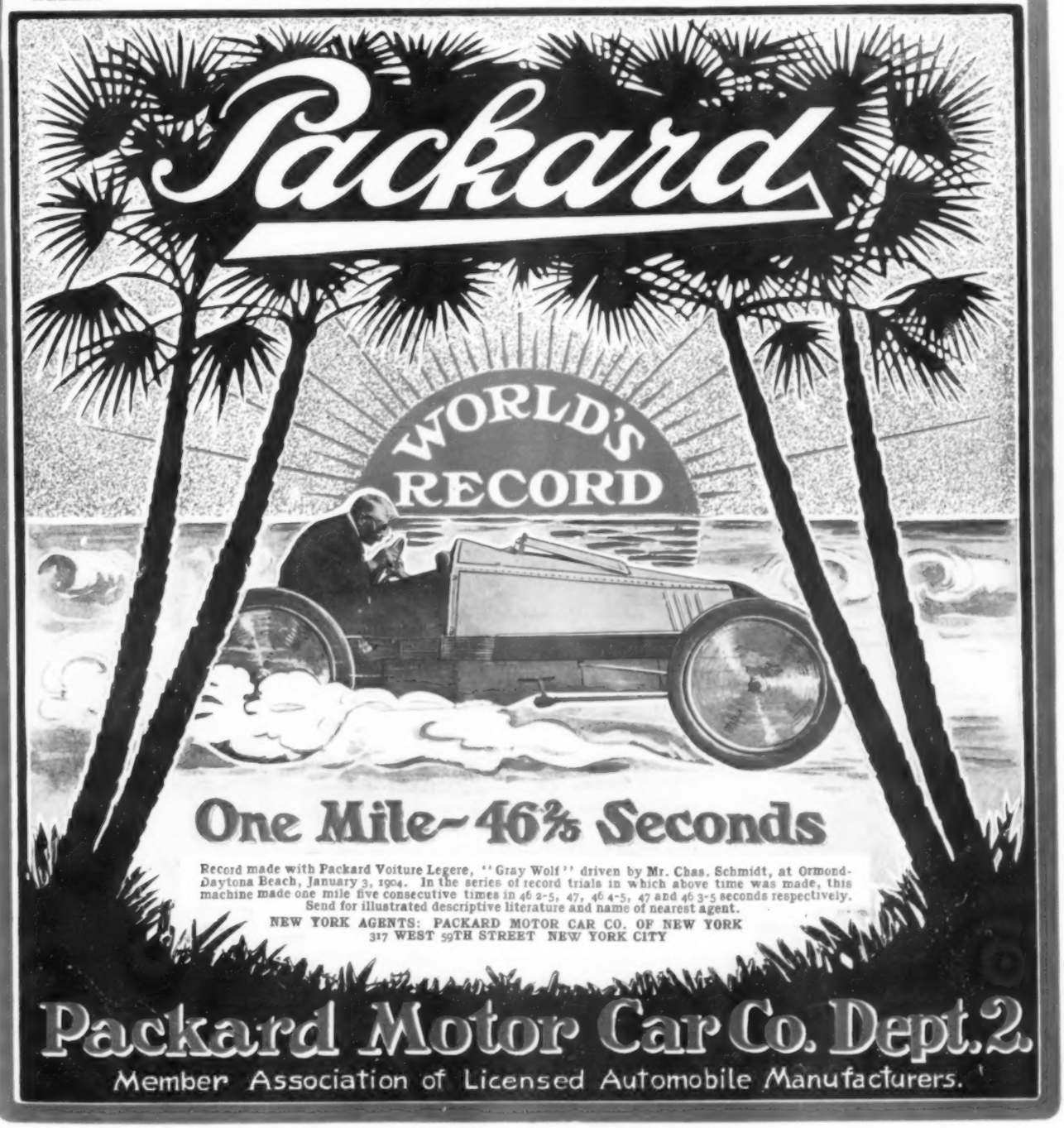
THE AUTOMOBILE

WEEKLY — NEW YORK—SATURDAY, FEBRUARY 13, 1904—CHICAGO — 10 CENTS


Packard
WORLD'S RECORD
One Mile—46⅖ Seconds
Record made with Packard Voiture Legere, "Gray Wolf" driven by Mr. Chas. Schmidt, at Ormond-Daytona Beach, January 3, 1904. In the series of record trials in which above time was made, this machine made one mile five consecutive times in 46 2-5, 47, 46 4-5, 47 and 46 3-5 seconds respectively.
Send for illustrated descriptive literature and name of nearest agent.
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KNOX

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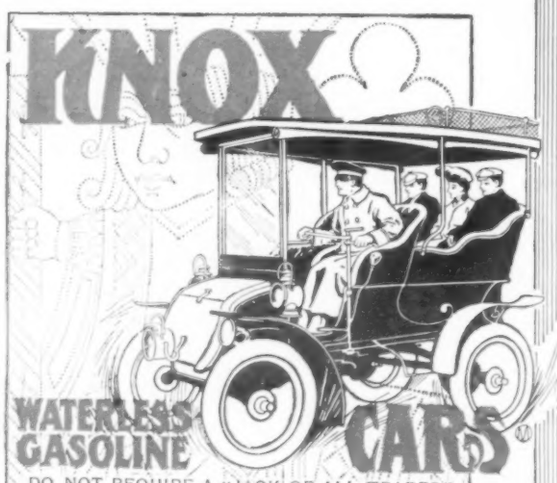

DO NOT REQUIRE A "JACK OF ALL TRADES" TO CARE FOR THEM.

For years the "Knox" has stood at the head for durability, practicability, easy control, and the highest type of service. Knox cars are the kind that go and keep going. Elegantly designed, richly built; equipped with the only high power engine cooled by air; patent steering device makes control easy as a wink, while the swivelled end side springs make riding as luxurious as an easy chair.

Note design with glass front (swellest yet).

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Six Styles Passenger Cars and Six Styles Commercial Cars to Choose From
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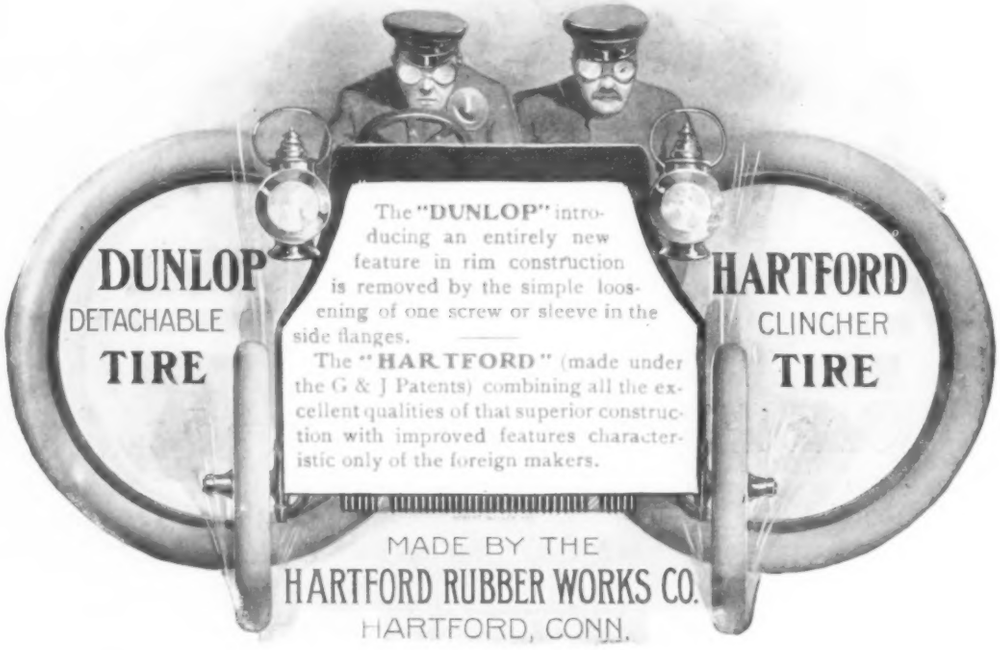
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The "DUNLOP" introducing an entirely new feature in rim construction is removed by the simple loosening of one screw or sleeve in the side flanges.
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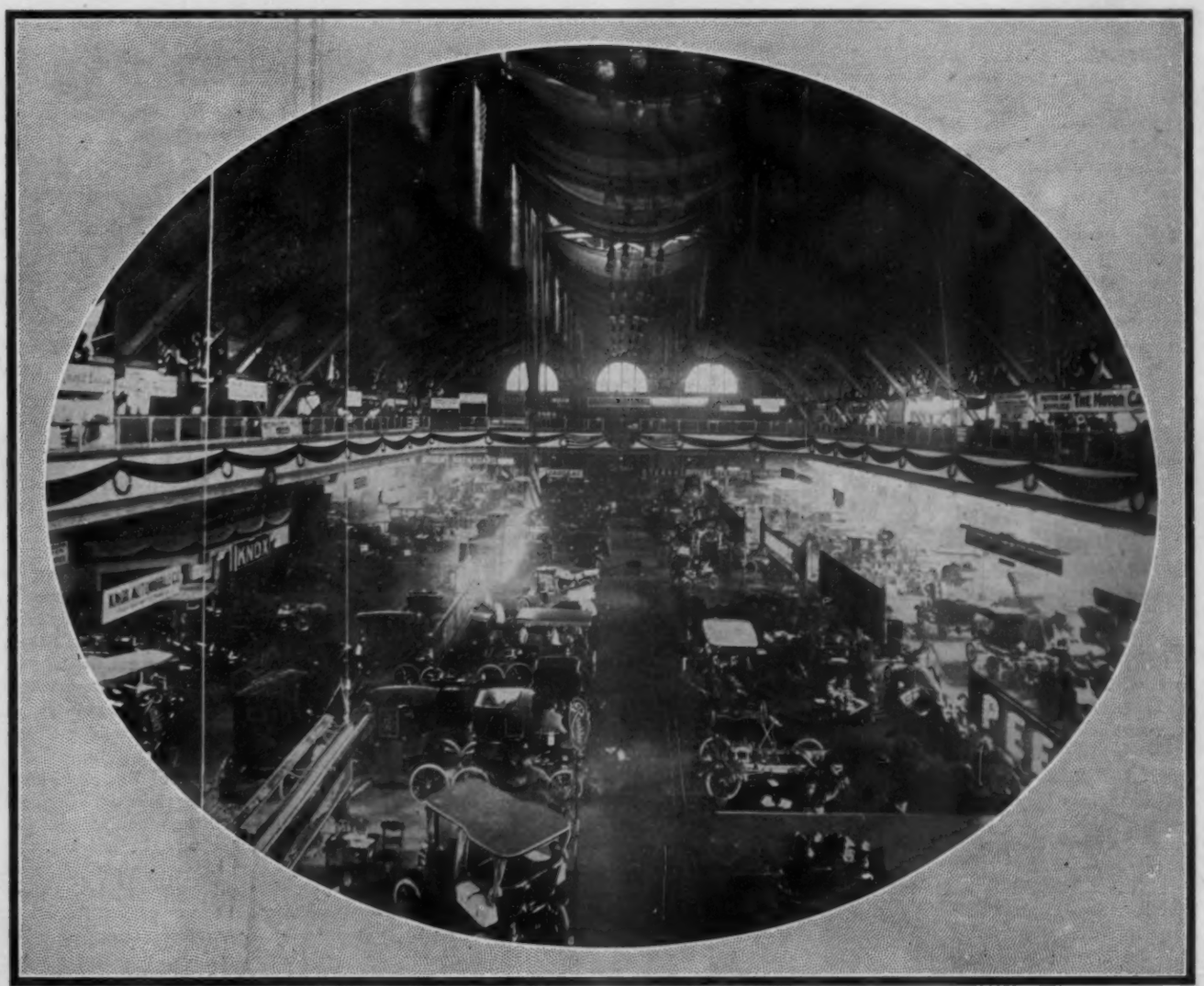
THE AUTOMOBILE

WEEKLY — NEW YORK—SATURDAY, FEBRUARY 13, 1904—CHICAGO — 10 CENTS

THE FOURTH ANNUAL CHICAGO SHOW

STAFF CORRESPONDENCE

As one interested in automobiles and looking in at the Chicago automobile show, it would be difficult after even a day's study and observation, to size it up for a compact measurement in a paragraph. The press agent has not been able to do it. When he had perfected his estimates and figured that $2,000,000 worth of automobiles and accessories had been placed on a ground floor space 175 by 376 feet, and in the balconies thirty feet wide; that in the first wet, windy, muddy night of the show



MAIN FLOOR AND BALCONY OF THE COLISEUM LOOKING NORTH, AS THE SHOW APPEARED MONDAY.

10,000 persons visited the exhibits as they were spread under the myriad lights from two miles of conducting wires arched overhead or dropped to the levels of illuminated signs; that the hundreds of palms lining the aisles or bunched among the machines in exhibition spaces had given to the show a summer garden effect in startling contrast to the weather outside.

When all this had been enumerated and it was shown that of the 182 vehicles on exhibition, the showiest of show pieces could not be bought for less than $10,000, it was just there that the interested and intelligent visitor to the exhibition awoke to the necessity of finding out something about the show.

An Unique Exhibition.

An automobile show is unique in the full sense of the word. A map of the possible streets in Mars would have seemed as strange ten years ago. Today a tonneau car of twenty horsepower, chugging away at the curbstone of a down-town street in Chicago will hold a changing curbstone crowd for hours in any weather: that there are 182 specimens of the machine on exhibition at the Coliseum has affected this natural interest in the horseless car and moreover has sharpened this interest through making plain to masses of chance observers in the past, something of the mechanical construction and operation of the automobile, and in the presentation of the myriad types of the machine, indicated to him how rapidly and how quietly the industry has grown to colossal proportions.

Following the Chicago horse show, with its tan bark arena, its roadsters in pairs, its six-barred gates and the rearing hunters that took the top bars without a flinch, its boxes, and its action of horse and driver and rider and multicolored grooms dancing attendance upon both man and beast, a show of automobiles becomes necessarily a sort of study in still life.

In the activities of placing exhibits in assigned spaces, nothing in the line of equipages presents the deadened helplessness of the automobile of heavy pattern, drained of its vitalizing gasoline, steam or electricity, and moving slowly into position under the influences of a dozen men who push and pull and haul to right and left and rear. A high-bred, snorting horse with the bit in his teeth and lifting a groom from the ground, as with arched neck and polished hoofs he steps high into the ring, brings the blood to the ears of the horse fancier and breeder; it has yet to be established if a racing car of fifty or seventy horsepower, trussed up in the grasp of a dozen men guiding it into place, can arouse inspiration.

It is when the machine has been trundled into its railed square of carpeted floor and when the palms are planted upright and the literature of the manufacturer and dealers has blossomed somewhere from them, that the visitor is prompted to his interrogations, to stooping postures under the bottom of the tonneau, and to the taking of possible notes in pencil.

"Questions?" was the reiterated interrogation of an exhibitor who has attended every exhibit of the kind since the first in America. "You can't count 'em, but you may be sure that nine-tenths of the Chicago questions are close to the point, whatever the questioner desires to make.

"One of the most surprising features of the questioning here in Chicago is the accurate knowledge of the automobile shown by the small boys They have been coming in here by the dozen, putting questions to me as sharply and intelligently as their fathers possibly could do. The reason for this is that the parents of most of these boys own automobiles. While the father and the mother may have little personal knowledge of the construction and operation of the machines, it may be counted upon that the boys in the family have come into close touch with the chauffeur, and through him have imbibed accurate knowledge of the machines.

"Naturally the boy has a keener curiosity than the adult and when his interest has been aroused he is going to the bottom of the subject. Having gone to such a length, he cannot lose that interest and knowledge, and the result from the point of view of the manufacturer and dealer in automobiles is that shows, while catering to the active present demands of the adult buyer, are doing a great work in educating the young people who will be the buyers of tomorrow."

Given a machine, with a group of interested persons around it, even with half a dozen men talking to the extent of gesticulating with one or both hands, the close observer of the group will be able to pick the chief figures at a glance. The exhibitor is seen easily at 150 feet. He may be resting a foot on a piece of brass trimming as he talks, probably with a shoulder buried in the upholstery. At the most an interested questioner will be sitting somewhere in the luxurious tonneau cushions, not wholly at ease; perhaps he may not have attempted more than resting a hand on a rail or lever. In such a group the caretaker of the exhibit will be seen, with a polishing cloth in his hand, waiting somewhere in the background, impatient until the head of the exhibit shall take a foot off the machine and allow the caretaker to repair the damage.

Spacious and Pleasing.

Novelties in this Coliseum exhibit have had distinct advantages that come with roominess in the aisles, a softened yellow light that in day or night comes through the draperies that arch the great roof of the building, and the possibilities of accentuating an exhibit by means of well-defined railings all round the assigned spaces. The regularity and spaciousness of the aisles and the generous portions of room available for each of the showings on the main floor, give to the panoramic view of the whole the unmistakable appearance of a homogeneous show, planned from the beginning.

Looking for contrasts on the main floor, nothing is sharper perhaps than are the contrasts in colors of the machines. Nearly everything in the spectrum is represented in car body or chassis. Not infrequently the upholstery itself stands out as a distinct intimation that the conventional cannot rule as yet. Pearl whites and jet blacks are extremes on the one hand, as lemon yellows and royal purples may be the extremes in colors. Between these there is scarcely a shade that somewhere in the decorative scheme of a machine has not been spread—at least by the striping brush.

Not all of these effects are pleasing to one whose sense of harmony in colors is acute. There are several of these vehicles out of which a woman in a street gown of striking colors would need to keep; or else, seated in them, she would need the protection of the automobile coat and of a laprobe of ample proportions. Black, with gold trimmings, is one of the most affected and effective decorations; next it, perhaps, are the deep maroons which always have lent so much to the tonneau types; olive greens have been used with tasteful effects, and the yellow chassis, pleasing enough in itself, has been put in combination with other colors to disadvantage.

Manufacturing a Gamble.

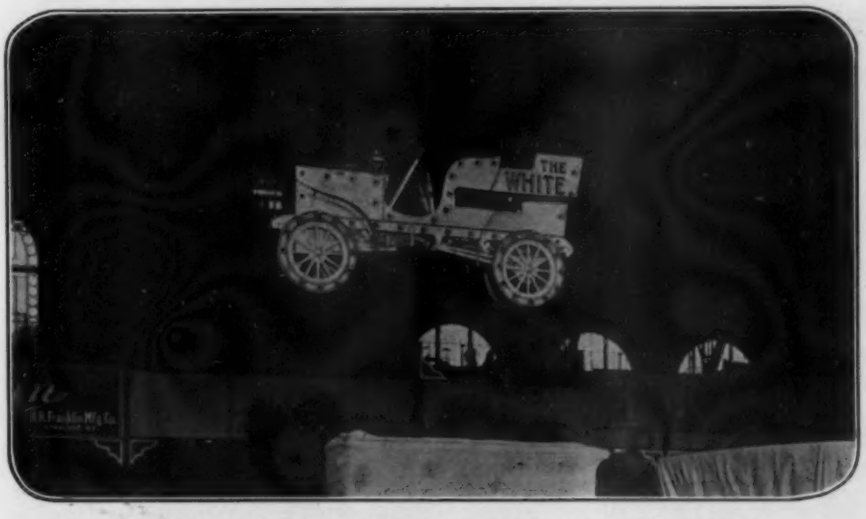
But in extenuation, the exhibitor reminds you that he did not build the car for himself; he will even admit that if he finally shall sell that particular machine at the show, it may be at the expense of returning it to the shops for a wholly new color scheme.

"It is a chance," said an old exhibitor, "You have to remember that there are a good many people able to ride in first-class automobiles who are wholly dependent upon tailors and dressmakers and milliners for their good taste in dress. Getting away from these authorities in clothes, they may be excused if for lack of expert promptings, they invest in an automobile that doesn't suit even the complexion of the chauffeur. The time has been not so long ago when the color sense of the wife has forced the husband to buy a machine that his judgment and knowledge of machinery and proportions could not back up.

"There is much less of this now, however. At the same time there is the bugbear of style with which the manufacturer and dealer have to reckon. In general, this idea of style may be said to be of Parisian origin, just as the bonnet and gown of the lady came from the same center. It is not something that is arbitrary, this fashion in automobiles; there is nothing in the form of a fashionable ukase issued between seasons from the Parisian marts.

"The ideas percolate slowly through the minds of the imitative buyers. In the beginning of interest in the automobile, these prospective purchasers of machines look to some one as an authority. He has a machine, likely an importation, and it is of a shape and color which alone will satisfy the imitative buyer, while in the matter even of levers the machine chosen by the purchaser must be a duplicate.

"For instance, last year we had a good customer who wanted a new machine, but our own styles did not strike his fancy, for the reason that they were not akin to the type driven by his friend. He explained just how he wanted the shape adjusted, and we found that easy enough. But when he insisted that the machine should have another lever, we were at sea for a long time. We didn't know just what to fasten that lever to, but finally our designer made it connect with the emergency brake, and in that shape the machine has given us a pleased patron."



A NOVEL ILLUMINATED SIGN LOANED BY A DENVER AGENT.

INDICATIVE OF HOME PROGRESS.

In a way that never before has been impressed upon Chicago, the Coliseum show has brought home to the masses of the people all that the automobile industry means to the section of country of which Chicago is the center. It has been commonplace enough any time in the last three years for citizens to receive from department stores, bundles of goods delivered from an automobile wagon in the street. For even longer the Chicagoan has had an eye for the vehicles in the downtown district and has been able to cross a street just in front of an automobile without signs of panic or hysteria.

But to see in this Coliseum exhibition dozens of exhibits from manufacturing concerns of which the average reader of current prints never even heard, and above this to discover that some of these manufacturers showing striking vehicles of the best type, have manufactured the machines close enough to the visitor's home, perhaps for him to see the chimney stacks of the plant—this has made an impress upon the Chicagoan, who has always been quick to note anything in the nature of material progress.

Once awakened to the fact that the industry must be catering to something more than an ephemeral craze or fad, the average visitor at the show, walking through the balcony exhibits of the scores of accessories to the automobile, receives a still deeper impression of the fixed and permanent status of the automobile. Here in this balcony, in space after space, all round the great building, he finds that of scores of manufacturing firms some are manufacturing some of the merest ornamental fixtures for automobile types, yet with these mere fixtures protected by patents and made the serious product of factories built to pay dividends upon invested capital. For instance to have brought home to him that the manufacture of the mere metal numerals with which to identify automobiles according to various ordinances has come to be a profitable industry, is something to awaken interest in the automobile as a permanency. That electric bells for sounding at crossings may engage one manufacturer while another is devoted to making the competing horn serving the same purpose, strikes the average man with the conviction that the horse is on the way taken by the dinosaur, and the great auk, and the pleosaurus.

DUMMY GIRLS WIN SMILES.

As a striking feature of the show, the figures in wax, clothed in the garb of chauffeur, amateur racer, and woman enthusiast are designed to bring the average visitor to an abrupt halt at several turns in the aisles. Some of these women figures are done to life, dressed in unquestioned good taste and veiled in becoming manner to tempt the smirks of the near-sighted masher.

In another way, too, they are likely to bring confusion to the same near-sighted individuals. Recognizing these dummy figures, it has been part of the pleasure of the young man with a visiting friend in tow, to drag that friend with scant time for preparation close to these seated effigies, there to make a hasty introduction in the freest possible manner. But the fact that many of the exhibitors are pleased to have the passing visitors of either sex make free with cars and step into them for a rest on the cushions, it has been suggested that only a matter of time is required to bring rout and confusion to this type of practical joker.

EXTEMPORANEOUS BOX PARTIES.

Using the automobiles as box seats—for the lack of any other seating arrangements in the building—the Chicago public has been appreciative of the courtesies of exhibitors. In a number of instances, with these vehicles filled with representatives of the Chicago Four Hundred, the passing unnumbered ones have had opportunity, while looking at the technical proportions and lines of the vehicle, to study the ways of the social set as well. Individuals who already have joined these extemporaneous box parties have sanctioned the acceptance of seats in the vehicles as unquestioned good form.

Wherever a visitor occupies a seat in reach of the horn, the note of its warning is sounded to the unaccustomed Chicago ear. By ordinance, anywhere inside the city limits, the horn of the automobile may not be heard. Many of the machines in use in Chicago are not provided with more than the bell, while others preserve the horn for the outlying roads across country and through neighboring villages.

A good deal of the holiday spirit has come into the Chicago show. It has a spontaniety and good-humored atmosphere that are felt and shared in by the exhibitors and the general public alike. The dispositions of the spectators are such as to spare the exhibitors much of the wear and tear upon both physiques and nervous systems. As an indication that the Chicago public is susceptible to an unusual degree, one has only to refer to a feature of the automobile show, long significant because of its absence.

"YOUR CREDIT IS GOOD."

The possibility of an automobile on the instalment plan!

The Chicago show has brought out the novelty. A Chicago department store whose credit department has been accustomed to passing upon the reliability of the individual who might wish to buy a month's grocery and dry goods supply at thirty days, is now calling upon that credit department to pass upon the man who wishes to buy an automobile with a first payment of 25 per cent. and to give his notes for the balance in instalments, the notes drawing 5 per cent. interest. According to the manager of the exhibit, there are people enough who are buying machines after this plan of partial payments.

"We can sell machines with as much cer-

tainty as we can sell anything else in our general lines," said he. "It is not a question whether the person buying may abuse the machine and then attempt to return it upon our hands at our loss. We determine if the man's credit is good. Then if he wants a machine we sell it to him, taking 25 per cent. cash and his notes for the remainder, payable within a year, at 5 per cent. interest. If his note is good he must pay it; if the machine fails under our guarantee, we have to make good. That is all there is to it."

"But the time of a machine at 'a dollar down and a dollar a week'—that is not close at hand?" was suggested.

"Well, no; you can buy diamonds that way, but automobiles and coal—not yet!"

Technical View of the Show.

To those who attend the Chicago show and who have not had opportunity to visit the Madison Square exhibit the same impressions of immense progress in the twelve months of 1903 that forced themselves on the visitors at the Garden will be repeated here. To those who witnessed the New York display the Coliseum show tells another story so plainly that he who runs may read. It is too plain for the possibility of doubt that the West (it is only West comparatively, not geographically,) has thoroughly awakened to the possibilities of automobilism; that it has emerged from the preliminary stage in which the small car and the low speed were sufficient for its requirements. No other Chicago show has been to such an extent a duplication of the New York display. The cars that pleased the eastern automobilist are now as much sought after by his western comrade in peace. Only in the foreign section is there any marked difference in the representation at Chicago and that at New York, and when local road conditions and the lack of anything approaching a leisure class in the west are considered, there is sufficient explanation for the difference.

With a very few exceptions there is manifested at the Chicago show fewer radical differences in type between the new and the old than is shown in the general improvement in the character of design and workmanship. And there is a considerable leaning toward the comfortable, if not luxurious, side and a corresponding movement away from the strictly utilitarian. Canopied automobiles and closed carriages are in such numbers as to be the rule rather than the exception. Trimmings are more ornate and color schemes are more elaborate. The automobile basket and the automobile costume are more in evidence than before.

Of exhibitors of complete cars who did not enter in the Madison Square display there are not any large number in the Coliseum and for the most part they are builders who have not sought trade all over the country but who have confined themselves to a local business. In these exhibits the character of workmanship is good and in some cases of a very high order. In design, however, there is apparent some confusion of ideas respecting details of construction, especially those connected with operation. Whether these come from a failure to recognize the advantage of a certain uniformity in methods of operation (manipulation) or whether it is occasioned by a conviction that the builder has something better to offer than ever was thought out before, it is impossible to say. How it will work out, too, is something that cannot be foretold. It has the very serious disadvantage that a driver of one machine would be unable to act promptly in an emergency should he have occasion to drive another make of machine.

There are few freaks in the Coliseum, just enough to show that the inventor is still abroad and few enough to show that the trained engineer and designer is coming into his own.

Summing up the show evidence, it can be said to confirm the opinion expressed at New York that there has been a general upward movement in respect to details of design and construction, a greater appreciation of the possibilities of comfort in the use of the automobile, and a greatly increased interest in the high powered American touring car.

Owing to the unpreparedness of the show on the opening day and the necessity for expedition in sending east actual reports prepared on the ground it has not been possible to cover all the points of special interest in this issue and we shall reserve for later issues, when deliberateness may replace haste, more extensive descriptions of notable exhibits.

Some Novel Western Cars Exhibited.

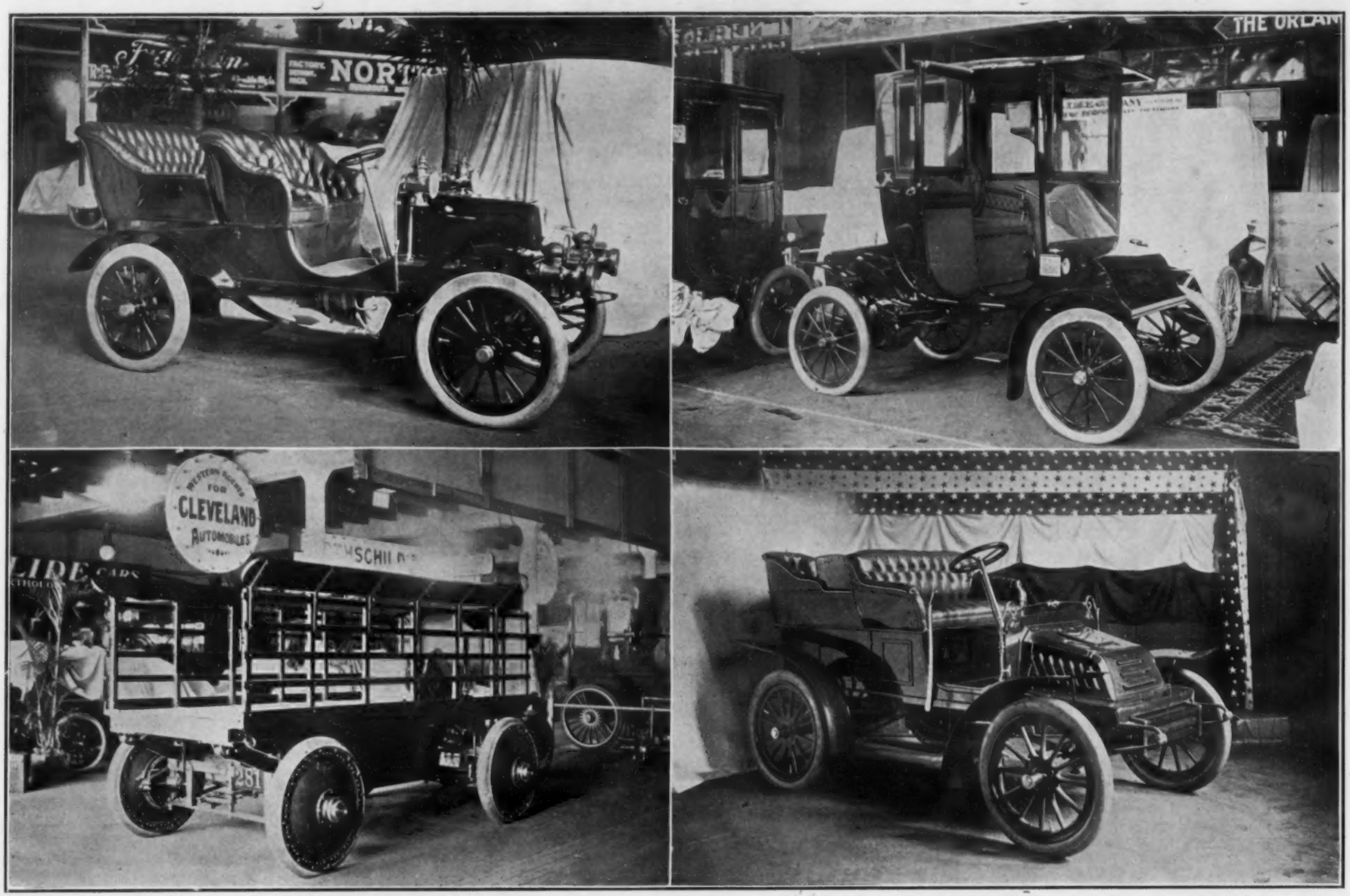
Among the high-powered cars of Western build, two notable examples of modern product are exhibited by J. L. Tincher of Chicago. These are both of the accepted French tonneau type in their outward appearance. The cars are of different sizes. One a 45-horsepower four cylinder tonneau with seating capacity for seven persons. The other car is similar in construction, except that it is smaller and is fitted with a 20-horsepower motor, also having four cylinders.

Taking the larger car as descriptive of both, it gives an immediate impression of great solidity and strength. This impression is confirmed when it is learned that the car complete with canopy top and glass front, weighs 3,200 pounds. The frame of this car is composite, consisting of double channel bar steel with a white ash core. No sub-frame is used, as the crank and transmission cases are provided with arms and bolted direct to the main frame. Both front and rear axles are solid, the drive to the rear wheels being by chain. The wheelbase is seven feet nine inches and the tread standard. Semi-elliptic springs are employed for the frame suspension.

The vertical motor in front is built with separate cylinders, each with cast water jackets. Both inlet and exhaust valves are mechanically operated from one camshaft, the valves being fitted on one side of each cylinder. The usual methods of modern motor construction are employed, including the machining of the crankshaft from a forged steel billet, phosphor bronze bearings, aluminum crankcase and the like. The carbureter used is from a design by the builder and the fuel tank, which is located under the front seat has a capacity for about 300 miles of travel. A tubular pin radiator is used in the cooling system. This is placed in front of the hood, which is open at the forward end and is of the modern fashionable square type. As a little detail showing forethought in design, the hood is collapsible, and can be easily opened up on top or at the sides and by the withdrawal of a sliding bolt can be taken off altogether.

Sliding gear transmission gives four speeds forward and reverse. This is arranged so that change from one speed to another is made direct without passing through intermediate gears. The high-speed is direct drive from the motor. A feature of the operating system is the connection of the clutch and transmission, so that when the side lever is moved to shift gears the clutch is automatically released. The clutch can be opened independently by a foot pedal in the usual way.

A special feature of this car is the system of brakes. It is fitted with friction band brakes of the familiar type worked by foot pedal and also powerful air brakes of the internal expansion shoe type, preventing rotation of the rear wheels in either direction when applied. An air compressor is, of course, fitted for the use of the braking system and it is also turned to account for other purposes. Constant pressure is automatically maintained in an air receiver. To this the lubricating system is connected so that the oil feed is always under pressure, its flow being regulated by the lubricator fitted on the dash. Hose connection can also be made with the air pressure system so that tires can be inflated to any required degree without manual labor.



Austin 25-HP. Car with Opposed Motor set transversely under Footboard.
Holson Heavy Electric Truck with "Gyroscope" Motors in all Four Wheels.

Pope-Waverley Electric Chelsea with Removable Enclosed Upper Body.
Hammer-Sommer 12-HP. Tonneau with Opposed Double Cylinder Engine.

SOME OF THE NOVEL WESTERN VEHICLES SEEN AT THE FOURTH ANNUAL CHICAGO SHOW, FEBRUARY 6 TO 13.

Car speed with constant engine speed is maintained by the simple lever simultaneously operating both clutch and transmission gears, before referred to and engine speed is controlled by the usual spark and gas lever attached to the steering post. The guaranteed range of speed is from practically zero to 60 miles an hour on a good road. Jump spark is used for ignition. The builder of this car has capacity for only a limited number of cars, but expects to turn out a dozen or more this season. He is now constructing the motor for a special racing chassis. This will be also of the four vertical cylinder type of very high power, the cylinder dimensions being 7 by 8 inches. With this car he expects to attract a good deal of attention during the coming racing season.

Enclosed Electric Runabout.

In the Pope Motor Car Company's exhibit a Waverley electric enclosed Chelsea finished in blue attracts favorable notice, especially as this has been a rather severe winter season in Chicago. This vehicle is one of the regular "Model 26" cars—a runabout with body built on rather pleasing lines—to which is added a detachable enclosed top converting an open air fine-weather automobile into a snug closed carriage with strong resemblance to the brougham type. The control and steering of the vehicle is carried on by the driver in the same position as though the top were not in place.

This carriage is fitted with the regular 3-horsepower motor, and a battery equipment of 30 cells furnishing current at 60 volts. The range of speed is from five to fifteen miles an hour. The wheelbase is 6 feet 8 inches and the tread 4 feet 6 inches.

For physicians' use or for shopping in a city, this combination vehicle is very attractive.

Holson Gyroscope Truck.

Another strictly commercial exhibit in the annex is an electric truck, built by the Holson Motor Patents Company of Grand Rapids, Mich. This is styled the "Gyroscope Motor Truck," on account of the method of drive. Each wheel is constructed of two dished steel discs with the convex sides outward and carrying on their inner periphery a circular rack. This engages pinions driven by electric motors enclosed in the halves of the wheels. Beneath the body there is a box containing the secondary batteries that furnish the current for running the motors. Aside from the peculiar shape of the wheels the truck in other respects closely resembles the horse-drawn vehicle.

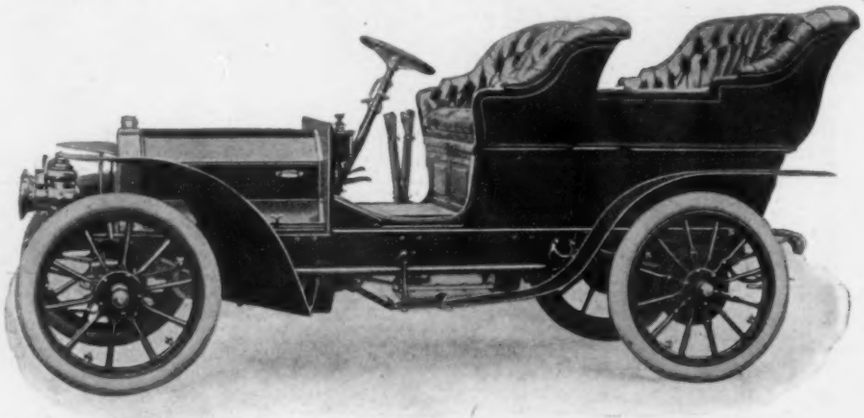
A Foreign Novelty.

It was a surprise to many visitors to find the importation of a foreign car exclusively in the hands of a Chicago agency The Benz-Parsifal was a novelty not only in this respect but also because it was not included among the foreign exhibits at the Madison Square show. The Mead Cycle Co. of Chicago, importers of this car, exhibit two complete cars (a 12-horsepower and a 22-horsepower tonneau) and also a 12-horsepower chassis, as well as a complete sliding gear transmission. As is widely known the Benz car has in the past been associated in the minds of many automobilists with an antiquated mechanism. This, however, has been long abandoned by the builders, whose works are located in Mannheim, Germany. At the Paris show of 1902-03 the Benz car indeed divided the honors for Germany with the Mercedes cars. In its modernized form this car follows the general arrangement of high-class French construction, with vertical motor in front, sliding change speed gears, live rear axle in the smaller car and side chain drive in the larger. The 12-horsepower car has two cylinders and the 22-horsepower four cylinders.

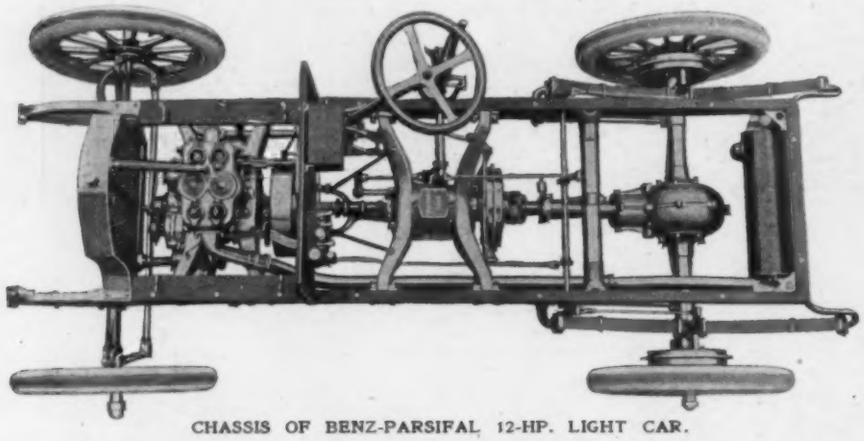
It will be of interest to enumerate some of the features of the Benz cars, taking the popular size (12-horsepower) as an example.

The frame is of the armored wood type, light and with great capacity for repair in case of mishap. Three forward speeds, with direct drive on the high speed are supplied in the transmission and, of course, reverse. Automatic inlet valves are fitted in the engine. Ignition is by make and break, current being furnished by magneto. The radiator is in front of the square shaped hood and does not project beyond the front end. It consists of vertical rows of two separate rows or grids of flat brass tubes held together by corrugated strips of copper, and acting as braces. For greater stiffness the rear axle is trussed and the driving wheels are made unusually heavy. A feature of their construction is that each spoke is through bolted at the hub instead of alternate spokes, as is usual. American tires are used, made to conform to the foreign rim dimensions.

With each car an extensive set of "spares" is supplied without additional charge, this amounting really to an insurance against vexatious delays that owners of foreign cars often experience in waiting for duplicate parts to be sent from the builder's foreign factory.



BENZ-PARSIFAL 22-HP. GERMAN TONNEAU WITH HIGH-BACKED SEATS.



CHASSIS OF BENZ-PARSIFAL 12-HP. LIGHT CAR.

Cannon Automobiles.

Much attention has been given by members of the trade and visitors to the Cannon cars shown in a rather obscure corner of the main hall. A runabout and a tonneau car are exhibited and the selling price, which for the tonneau especially is quite low, as well as some of the details of

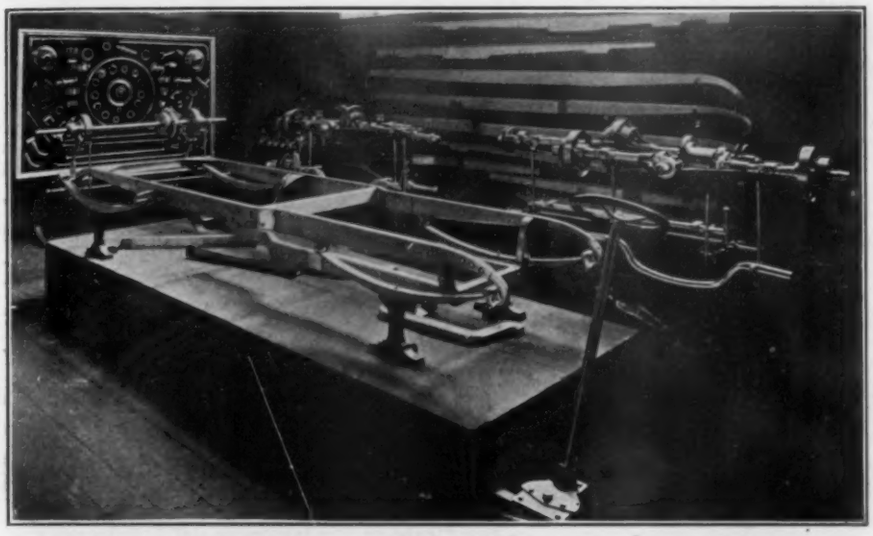


EXHIBIT OF FEDERAL COMPANY'S PRESSED FRAMES AND PARTS.

construction have caused a good deal of comment.

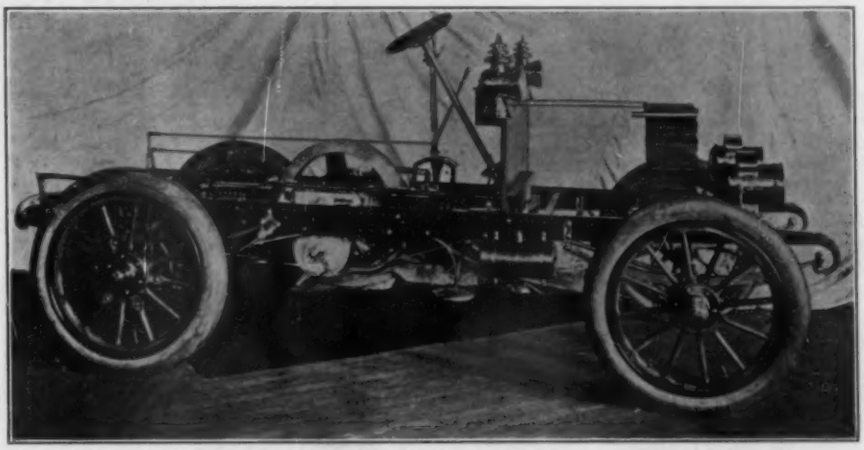
This car is named after the designer, W. B. Cannon. Last season several cars of this type were built and sold. They were not, however, placed on the open market and so have not become well known outside of local circles. The Cannon cars are built by the Burtt Manufacturing Company and the Michigan Buggy Company, both of Kalamazoo, Mich. The first named company has been engaged in the manufacture of gasoline engines for a number of years, and now constructs the mechanical parts of the cars. The buggy company is an old established concern and to this combination it contributes the bodies and other woodwork.

Discussing the machines in turn, the runabout is not unlike the Cadillac in general appearance, having the radiator in front set in a recess.

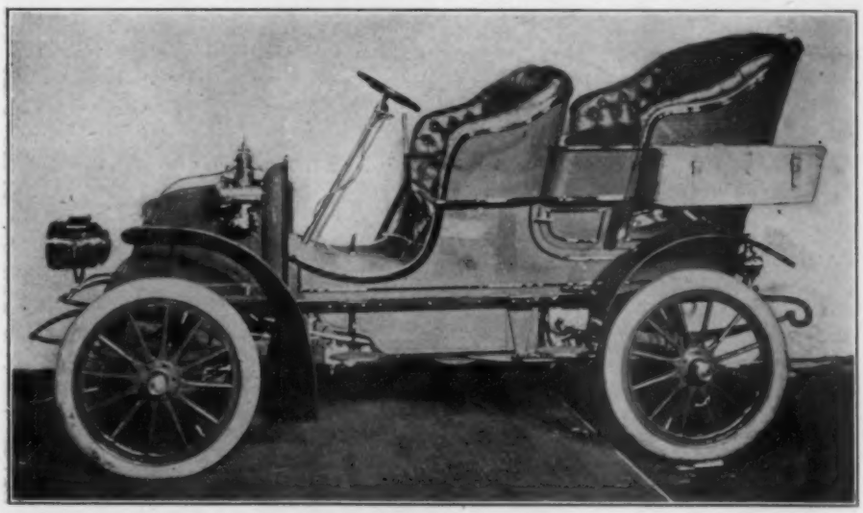
Side springs seventy-five inches long and two inches wide carry the frame to which the body is attached and connect the front and rear axles, as in the familiar Olds type. The motor is a 5 inch by 5 inch water-cooled gasoline engine, rated at seven brake horsepower at maximum running speed. It is fitted with mechanically operated exhaust and automatic inlet valves and the engine frame and cylinder are cast in two parts, so that should one be broken it would not be necessary to renew the whole. The transmission, of the planetary type, gives two speeds forward and reverse and is inclosed in the oil-tight case The drive is direct when on the high speed. A spring cushion between the engine flywheel and the transmission is fitted to take up shock due to sudden changes in speed and starting from rest. Jump spark is used, the coil being placed under the seat. A float-feed carbureter is fitted and for the cooling system a rotary pump with copper pipe connections instead of hose. The gasoline tank, located directly behind the cooling coils holds five gallons, and the water tank which is placed below this has a capacity of two gallons.

Seamless steel tubing with forged steel ends is used for the front axles, the wheels running on ball bearings. The rear axle is of 1 1-4 inch steel, with spur gear differential.

Steering can be affected from either side of the car, the steering pillar being in the middle of the seat with hinged cross handle. Throttle and spark control levers are placed close to the steering handle and the usual water equipment is included.



CHASSIS OF 24-HP. STEARNS CAR SHOWN ON MAIN FLOOR.



CANNON 15-HP. OPPOSED CYLINDER TONNEAU WITH SIDE ENTRANCE.

A double-opposed cylinder 15-horsepower engine supplies the motive power in the larger car, which is fitted with a removable tonneau body. Entrance to the tonneau is by side doors. The rear seat is broad and gives really a surrey effect, with the exterior appearance of a tonneau body.

The engine is placed with the cylinders "fore and aft" and the drive from the transmission is by center chain to the differential on the rear axle. The transmission is a modification of the sun and planet type, giving four speeds forward and reverse.

There are the usual change speed and brake side levers, and in addition a center auxiliary lever which gives a ten-miles forward speed and also a three-mile speed

for heavy hill-climbing. The main frame is of angle steel and the body is carried on half elliptic springs. In this car advantage has been taken of all "waste" spaces to fit receptacles for carrying tools, supplies and light baggage.

The builders expect to turn out about fifty of the large cars and 500 of the small runabout type this season.

Synnestvedt Opera Bus.

A new electric vehicle of unconventional design is an opera bus shown by the Synnestvedt Vehicle Company of Pittsburg, Pa. This bus carries five passengers in the inside on pedestal seats and two additional passengers on the driver's seat. The vehicle is constructed with separate chassis and body so that the latter can be varied to suit special requirements. The frame is of channel steel narrowed at the forward end and with steering pillar and wheel, and side brake lever attached not unlike ordinary gasoline car construction. The front axle is carried on a cross spring, and the rear axle on half-elliptic springs fitted within the chassis so that the spring ends do not project rearwardly. Tubular reach rods connect the front and rear axles and are stiffened with the rods from about midway of their length to the front axle jaws. One motor is used with a spring nose suspension in front and bracketed at the rear to the back axle. The connection between the motor and the axle is by screwed staybolts with right and left hand threads.. This makes it possible to take up any slack in the driving chain which in this vehicle replaces the spur gears usual on electric vehicles.

The motor is suspended crosswise in the frame, and the armature is keyed to a sleeve which is connected to the central shaft by a spur gear differential. At each end of the central shaft is a small pinion carrying a Morse chain which meshes with a similarly cut gear on the drum bolted to the inside of the driving wheels.

At the driver's seat there is a controller of the street car type, which gives a range of forward speeds of 5, 9 and 13 miles an hour and two reverse speeds. This vehicle has a wheelbase of 96 inches and weighs 3,200 pounds. In the exhibit a hand brake is fitted on a drum on the central motor shaft and shoe brakes on the solid rubber tires. These, however, are said to be only for emergencies or for "holding" the car when stopped.

Automobiles on the Instalment Plan.

A collecton of various models of the Cleveland cars is shown in the annex by the local agents of the builders, Rothschild & Co., of Chicago. This large department store has added to its specialties the sale of automobiles and automobile supplies and goods of every kind. It has also begun the sale of automobiles on the instalment plan, an innovation in the automobile business though no arbitrary rule as to the amount to be paid down and the amount of later cash payments has been made. In explanation, the management said in an interview, that customers differ very much in their desires in this respect, some preferring to make much larger first payments than others. No advance on the list prices is made, the purchaser simply signing interest-bearing notes for the balance after the initial payment is made. During the brief time this plan has been in operation no difficulty has been met with. Before sales are made the credit of the prospective buyers is, of course, carefully inquired into by the credit department of the store. The effect of this method of purchase on buyers at the show is being watched with interest by the local dealers, and it would not be surprising if others adopted the system should it prove to have business "pulling" powers.

A 12-Passenger Brake.

A vehicle commercial in purpose though not in form in the generally accepted meaning of the term, is the large twelve-passenger, canopy top brake of the Chicago Motor Vehicle Company. This is of the familiar type used for sight-seeing in cities and similar purposes. It is equipped with a double-cylinder, 30-horsepower gasoline motor carried under the body. Announcement is made that the receiver of the company has finished up a number of these vehicles ready for immediate delivery. In the annex the company also exhibits a chassis equipped with its now well-known friction drive, for the reception of a heavy truck body.

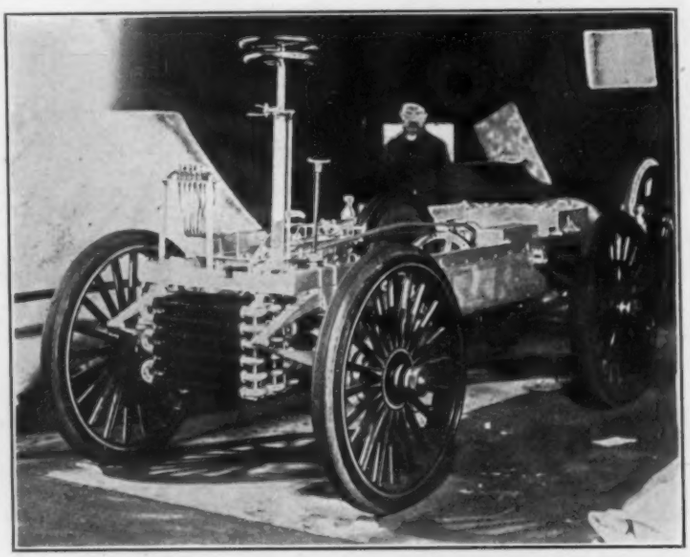
Friction Drive Runabout.

Among the exhibits of what might be classed as peculiarly Western types of machines is a very handsome light car for two persons shown by the Marble-Swift Company of Chicago. Its chief peculiarity is in the transmission which is of the friction type. In outward appearance there is no indication of any such peculiarity. The car is extremely "smart" in its lines. Back of the seat the body does not slope down in the usual box lid style, but has a level extension on a line with the footboard, and fitted with a lip all around making a very convenient shelf or carrying place for light baggage when touring. A 10-horsepower, 2-cylinder vertical engine is fitted under the front hood. The weight of the car complete is 1,000 pounds.

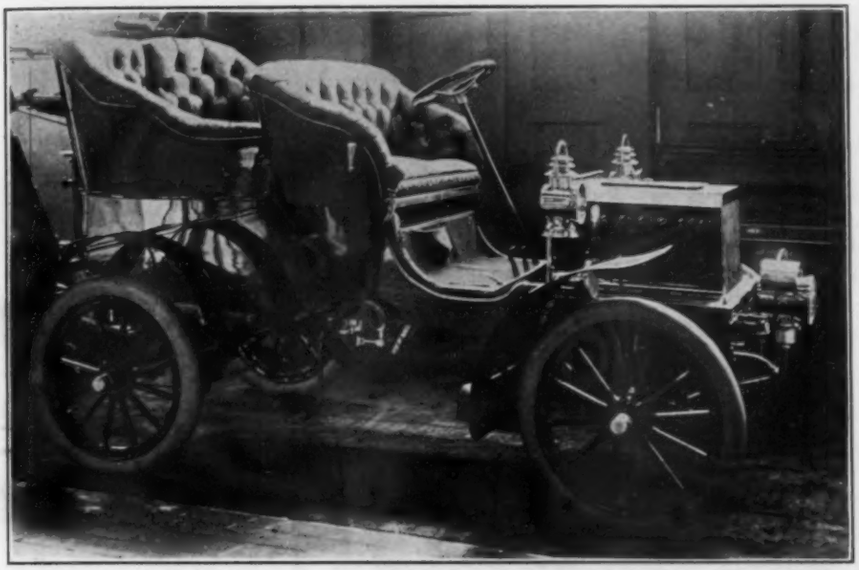
Auburn Automobile.

Another Western novelty is the front entrance tonneau Auburn car exhibited by the Auburn Automobile Company of Grand Rapids, Mich. During the last season this company turned out several cars which found ready sale locally and now it comes forward for a larger recognition in the Western show. It presents a number of novelties in general arrangement, although separately each component is along well tried lines. At first glance the car calls to mind the familiar Winton model, but a closer inspection shows few real points of similarity. It has a hood in front, but there is no motor under this—only the gasoline and water tanks. The motor is of the opposed cylinder type, developing 25 horsepower at 1,100 revolutions a minute, and it is placed crosswise under the footboard. In this position it is more accessible than is usually the case with this type of motor. The cylinder heads, in which the jump spark plugs are screwed, extend out at each side flush with the frame. Examination of the crank ends is easily made by lifting up the footboards and removing the cover of the crankcase. The flywheel is forward of the engine and immediately back of the radiator which is suspended below the body and is of the tubular type.

The transmission is a modification of the sun and planet type. It fits very snugly



CHASSIS OF CHICAGO FRICTION DRIVE TRUCK.



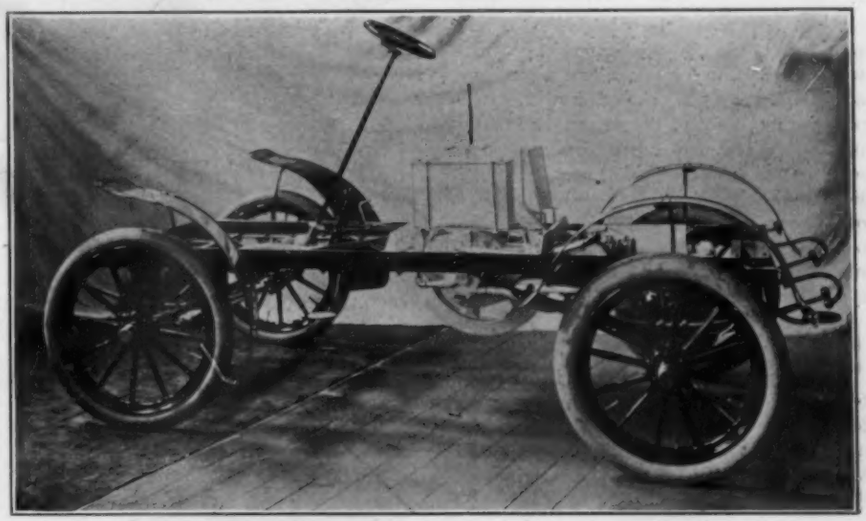
AUBURN 10-HP. CAR WITH STORAGE SPACE IN HOOD.

up to the engine and is under control from a small lever under the steering wheel that gives three forward speeds and a neutral position releasing the engine. Reversing is accomplished by a foot-pedal which can be operated instantly when desired. The transmission is also under the foot-board and is so designed that it can be disconnected and removed entirely from the car in a few minutes. This mechanism has been protected by patents.

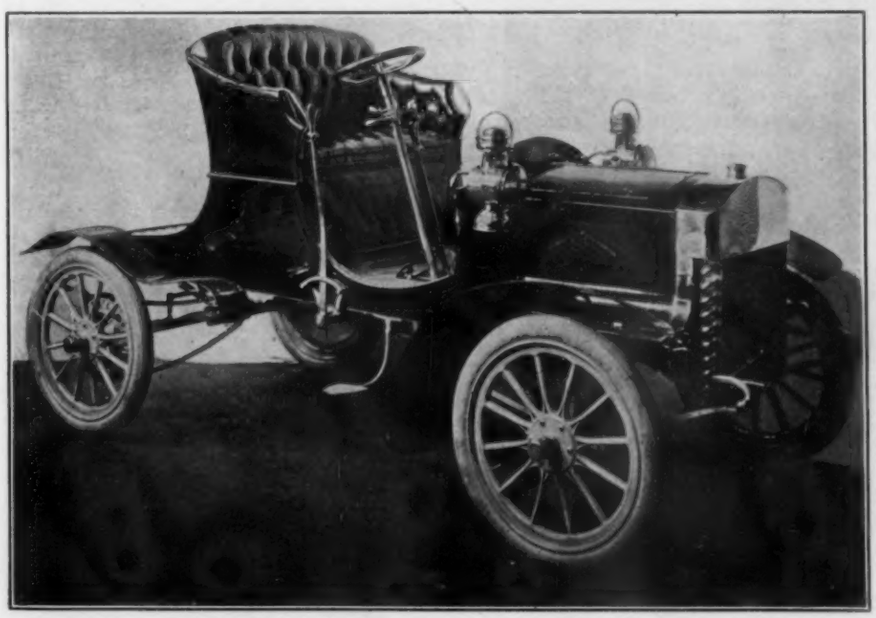
From the transmission the jointed propeller shaft extends rearward to a differential of the bevel gear type. From the peculiar position of the engine only one "corner" is turned in the drive as in the case of cars with vertical motors.

A feature of the engine construction is the inlet valve which actually consists of a rest of three small valves. Owing to the rapid action of these small valves the builders claim that the engine has a range of speed from 125 to 1,600 revolutions a minute.

Other details of construction include: angle steel frame, Timken roller bearings, double brakes, forced lubrication, direct connected circulating pump. The wheelbase is ninety-three inches and the tires, clinchers, four inches by thirty-two inches. The weight, ready for the road, is 2,000 pounds.



CHASSIS OF AUBURN 10-HP. SINGLE CYLINDER TONNEAU.



MARBLE-SWIFT 10-HP. DOUBLE DISK FRICTION-DRIVE RUNABOUT.

NEW RETAIL DEALERS' ASSOCIATION FORMED IN CHICAGO.

Special Correspondence.

CHICAGO, Feb. 8.—An association of retail automobile dealers was formed, last night, at the New Southern Hotel. The purpose of the organization is the advancement of acquaintance, interchange of ideas and the securing of information relating to the trade." The name adopted is The Chicago Automobile Dealers Associat on. The charter members are as follows: Mead Cycle Co., Locomobile Co. of America, Ralph Temple, Arthur G. Bennett, Winton Motor Carriage Co., Githens Bros., Pardee & Co., Knox Automobile Co., Orlando Weber Co., Greer Motor Car Co., Hayden Automobile Co., Illinois Motor Car Co., A. C. Banker, Woods Motor Vehicle Co., Apperson Bros. Automobile Co, Thos. B. Jeffery & Co., Dan Canary Automobile Co., Chicago Automobile Repository Co., Studebaker Bros. Mfg. Co., and Cadillac Automobile Co.

Ralph Temple, A. C. Banker and George S. Lewis were appointed a committee on ways and means. It is proposed to hold meetings at stated intervals and the organizers believe that much good will result.

The clause in the Hill bill, now pending before the New York Legislature, which referred to motorcyclists, has been stricken out at the request of Alexander Schwalbach, chairman of the legal action committee of the Federation of American Motorcyclists.

Closed Automobile Bodies—Their Development and Present Styles.

From the spidery stanhope of 1900 to the luxurious limousine of today has been a tremendous advance toward automobile perfection—so great that it now seems as if the acme of luxury had been reached in automobile body designing. While European builders have shown the way in the matter of design, the American manufacturer has been quick to profit by example and the buyer has shown his appreciation by an increasing demand for more comfort in bad weather than is afforded by the popular tonneau type of vehicle, whose comfortable use is limited to pleasant weather.

Although closed motor carriages are by no means a novelty, as many electric hansoms, broughams and landaus have been in public and private use for years, the gasoline motor car in America has, until recently, occupied the position of a fair-weather vehicle and the canopy top, which was a novelty on American cars a year ago, afforded but partial protection to the occupants and did not fit the automobile to displace time-honored horse and brougham for theaters, shopping and social functions. But now the gasoline car with limousine or other form of closed body promises to become as popular for town use as the luxurious horse-drawn vehicles of conventional type.

Early French Closed Cars.

The first attempt made in France to provide a road car with protection for the occupants took the form of a flat top canopy, made light and stiff by the use of thin strips of hard wood, covered with waterproof canvas, supported by four or six standards, usually removable. The front of the passenger space was inclosed by a glass panel fixed between the forward standards at the dash line. The sides and back of the car could be inclosed by canvas curtains, which were carried rolled up and attached to the top or stored away under the seats. The French practice of engine and transmission gear disposition developed the tonneau type of body, and the removable canopy top followed as a matter of course.

The next step toward luxury and additional protection for the occupants was the fitting of removable glass panels in the rear of the car in place of curtains. From this the limousine was a natural evolution. the earlier examples being built-up tonneaus with entrance to the enclosed portion by a door at the rear or at the side of the vehicle, the left front seat lifting to give access to the compartment. The limousine met with instant favor in Paris, London and other European cities and various styles of closed cars followed, such as the landau, landaulet, hansom, theater-bus and omnibus, all being particularly well adapted to town use.

DARRACQ CANOPY TOP SURREY WITH REMOVABLE REAR GLASS PANEL.

PEERLESS LIMOUSINE WITH FRONT DOOR AND HINGED FRONT SEAT.

A number of especially designed closed cars have, from time to time, appeared, one of the most widely known being the much advertised Passe Partout which started in April, 1902, from London on a round-the-world tour. The Passe Partout was built on a long wheelbase Panhard chassis and had a commodious body in which were four berths, folding tables and many drawers and cupboards for storage. While the car was unique in its appointments it did not compare in luxury or utility with the Serpollet steam landaulet built the same year for the Shah of Persia.

Metal Supplants Wood.

A radical departure from the methods of builders of horse-drawn vehicles marked the manufacture of closed cars, metal being substituted for wood wherever possible. Sheet steel and sheet and cast aluminum took the place of built-up veneers and steam-bent wood panels in body building. A strong and light construction was thus obtained and bodies produced which were capable of easy repair in case of damage to the panels of the body work

PUEGEOT VICTORIA HANSOM, WITH SIDE ENTRANCE.

RENAULT SIDE-DOOR LANDAULET.

The tendency toward more luxurious cars was emphasized at this year's New York show, where many of the American manufacturers exhibited cars with closed bodies of various types. The most unpretentious shown were of the folding buggy or stanhope top type provided with glass panel curtain front and waterproof side curtains, completely inclosing the occupants. The Elmore physician's stanhope was one of these. To enumerate the various American gasoline and steam cars which are now built with detachable canopy tops would be to name more than half of the concerns that exhibited complete vehicles at the show—in fact, practically all manufacturers now fit such tops on order and one company makes the canopy top a part of the equipment of its regular model.

Side Entrances Wanted.

There is a growing demand for side entrance to the rear seats of the open car. This is easily provided for in the double surrey but is a more difficult matter in the conventional tonneau. But the problem has been solved ingeniously in a number of the prominent makes of automobiles of this year and last. This feature will undoubtedly be a strong factor in the growing popularity of the closed cars. It necessitates, in most cases, a very long wheelbase. The side entrance for the tonneau has not yet been generally adopted by American makers, but it is a desirable feature and will doubtless appear on many cars of home manufacture before the close of this year.

MORS EXTENSION LIMOUSINE.

It is interesting to note that American steam vehicles were built several years ago with bodies designed on the lines of the familiar station wagon with the sides inclosed with removable curtains. While a thoroughly practical type and attractive in appearance, the station wagon did not achieve much popularity, although it is a form of combination open and closed body that is well represented by the double surrey with top and glass front.

Many of the most luxurious limousine cars are specially designed for easy entrance to the rear portion, the space

DARRACQ SIDE-DOOR LANDAULET.

PEERLESS SEVEN-PASSENGER LIMOUSINE WITH FRONT ENTRANCE.

usually occupied by the left half of the front seat being left clear and open, with a door, which extends from the floor of the car to the top, giving access to the interior. In some cases an extra passenger may be carried on a folding seat in front beside the permanent one provided for the driver of the car.

Some New Luxurious American Cars

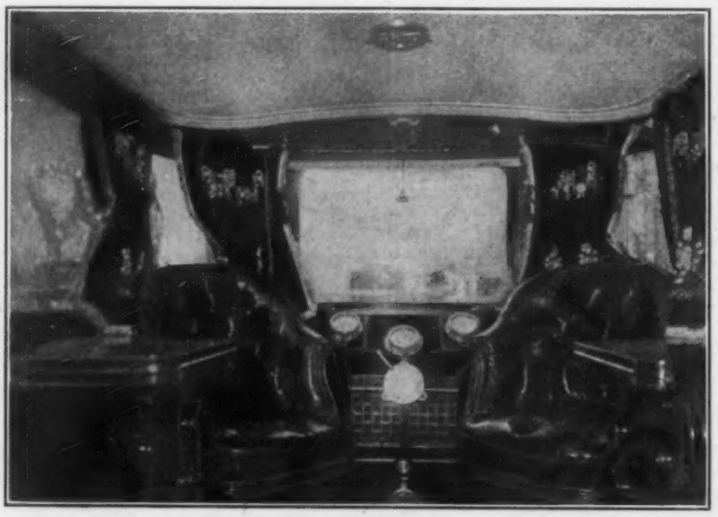
Among the best examples of luxurious closed American cars may be mentioned the Peerless limousines. One of these is made with solid panel body with beveled plate glass windows let into the front, sides, and back. Access to the closed compartment is from the left side of the car and is particularly easy, as the left half of the front seat is a skeleton folding drop seat, which is used only under exceptional conditions. This car is well adapted for use in cities and during inclement weather. The interior is electrically lighted and a clock, folding desk, mirrors and sundry toilet articles are part of the furnishings.

Another Peerless car is made with the front entrance through a swinging seat, the left half of the front seat being suitably hinged and supported to turn outwardly, giving easy access to the interior through the front door. The upholstery of these cars is sumptuous and the fittings very complete.

PEERLESS "METROPOLITAN" CAB WITH SLIDING CURVED DOORS AT FRONT.

A car built on unusual lines is the Peerless Metropolitan cab. The enclosed portion is separated from the front seat by an open space running entirely across the car and is accessible without interfering with the driver or without his assistance. The passenger space is enclosed with a permanent top having a curved front, the doors sliding on wheeled tracks with ample space for quick entry or exit. The cab, when closed, affords perfect protection to the occupants, but the driver is, perforce, exposed to the elements.

A limousine with handsome body and silver-plated metal fittings is built by the Locomobile Company. This car is *de luxe* throughout, the power plant and carriage work being of the highest grade, with a particularly luxurious and roomy inclosed compartment. Among the many novel details and refinements is a safety glass front, steel wire netting being embedded in the heavy plate glass to afford protection to the driver in case of breakage.

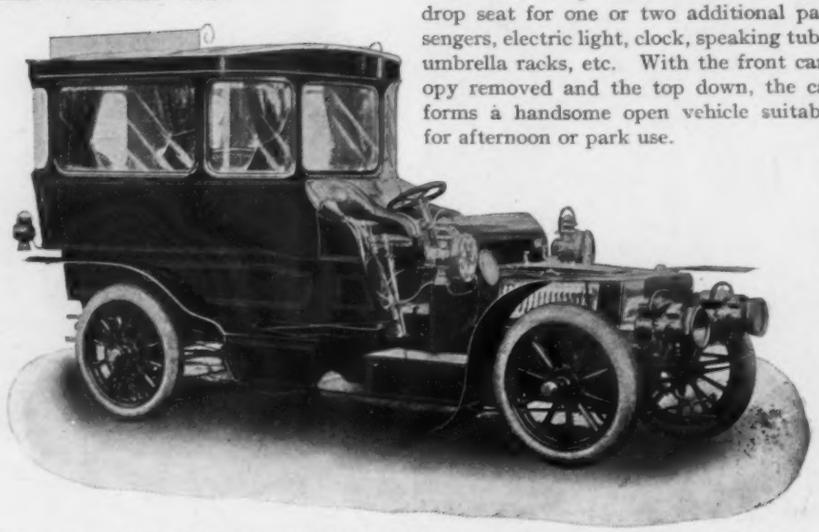


LUXURIOUS INTERIOR OF ENGLISH "PARLOR" CAR.

Another American concern which is building limousines is the Electric Vehicle Company. The example shown by this concern at the recent New York show, was unusually complete in its appointments. Entrance to the rear part is had by lifting the left half of the front seat. The interior is electrically lighted and many toilet conveniences are provided.

Popular French Landaulet.

Many of the cars of French manufacture that have found their way to this country are of the closed type, the landaulet being one of the most popular styles. An attractive carriage is the Renault with landaulet body. This gives side entrance to the rear portion and ample protection to the occupants. A removable canopy is provided for the protection of the driver. The car is luxuriously upholstered and fitted with many conveniences, such as a drop seat for one or two additional passengers, electric light, clock, speaking tube, umbrella racks, etc. With the front canopy removed and the top down, the car forms a handsome open vehicle suitable for afternoon or park use.



MOTOR MANUFACTURING COMPANY'S HUGE "PARLOR" CAR—REAR ENTRANCE.

The Extension Limousine.

A more pretentious carriage is the extension limousine which is a model popular in Paris and occasionally met with in this country. Entrance is usually at the back with the usual two corner seats, additional seating capacity being provided by several upholstered folding seats. A 15-horsepower Mors, which has attracted much attention in New York, is fitted with a body of this type, the upholstery of the closed compartment being in red morocco with two folding seats on the side which have folding arms. A hinged table is provided for the use of the occupants, and is of sufficient size to admit of its being used to spread a luncheon or play a game of bridge. The sides and top of the inclosed portion are covered with red broadcloth, matching the leather seat upholstery. Cord luggage and hat racks, umbrella and cane stands and a number of toilet articles are provided for the comfort of the passengers. The glass sides of the car may be opened or entirely removed and the large glass between the compartment and the front seats may be lowered to the level of the top of the seats. Communication with the driver is had by means of an electrical signaling device, eight buttons being arranged so that pressure on any one of them will illuminate a corresponding word or words on the dash as follows: "Right," "left," "slower," "more speed," "stop," "retrace," "turn," and "home." The interior is lighted by acetylene gas, the lamp being set in a ceiling globe of generous demensions ventilated by a short chimney passing through the roof of the car.

An English Parlor Car.

A car built on similar lines was exhibited at the last Paris show by an English concern, the Motor Manufacturing Co Four luxurious revolving arm chairs form the seats and the interior is furnished with many conveniences, including a folding table, clock, barometer, thermometer, signaling system, and means for heating the compartment. The metal fittings are silver plated, and ornate velvet curtains, embroidered in silver, screen the windows.

Side Entrance Limousines.

One of the popular styles of Kelner, of Paris, is the solid top limousine with side entrance through a full height door opening at the front of the inclosed portion, the left half of the front seat being omitted. This type of car gives unusual ease of ingress and egress and is well fitted to take the place of the closed horse-drawn vehicle for theaters, shopping and general town use. The front of this limousine has a wide space provided for entrance or exit the door being hinged to open at the side and swing forward.

A car much used in Paris, although by no means new, is the Victoria hansom with low hung body and elevated driver's seat. The example illustrated shows a Peugeot with luxurious upholstery and easy springs. The occupants are protected in inclement weather by a curved apron and hinged glass front.

DARRACQ LANDAULET WITH COMMODIOUS LUGGAGE BOOT.

The American Darracq Co. has recently imported a number of handsome closed cars, the interior of one showing a roomy and luxurious compartment. The body is the popular landaulet type with a number of conveniences for the occupants, including toilet articles, card case, clock, cane and umbrella rack and an extensible cane seat for the use of a third passenger.

French Braking Trials.

The French committee for automobile traffic recently made a series of experiments in the Bois de Boulogne for the purpose of comparing the quickness with which horse vehicles and automobiles can be stopped, writes Consul General Richard Guenther to the State Department. The macadamized road was muddy and it was to be expected that the hoofs of the horses would find a better hold than the rubber tires of the motors. The latter however, showed themselves superior in this respect. Two vehicles with one horse each, two with two horses each, and one with a pony competed with an automobile of 6 and one of 40 horsepower. At a speed of 7 1-2 miles per hour the horse vehicle could be completely stopped only at 30 feet; the two motors, at 10 feet. At a speed of 10 miles per hour the one-horse vehicle stopped at 40 feet; the motors at 13 1-2 feet. At a speed of 12 1-2 miles per hour the distance increased to 43 1-3 feet and 16 3-4 feet, respectively. As one of the horses was overworked, the automobiles made some further tests alone, resulting in stopping at 33 1-3 feet at a speed of 16 miles per hour and at 60 feet at 25 miles per hour.

Motorists Do Not Want Speedway.

The project to secure to automobilists the use of the Harlem speedway in New York one day of each week has been vainly seeking support. The horsemen who have been using the speedway are incensed by the proposition but there seems to be no warrant for apprehension, judging from the lack of interest taken in the movement by automobilists. The name of former president A. R. Shattuck, of the A. C. A., has been used to give weight to the idea and it has been stated that he was taking an active interest in the movement. According to various members of the Automobile Club, this is untrue and no petition has been circulated at the club for the promotion of the plan. Winthrop E. Scarritt, president of the A. C. A., has declared himself strongly opposed to any effort to secure the use of the speedway at any time. A number of good reasons have been advanced by prominent motorists why the idea is not a good one. The course is too short, it is not straight, and the dust which would be kicked up by a car would be insufferable to any one behind it.

Motor Service on Austrian Railways.

The Austrian government has recently made arrangements for an experimental motor service on the so-called secondary railroad which connects Trieste with the town of Buje in Istria. Experiments in this direction are also being made on a number of branch roads in lower Austria and Bohemia, and are being watched by the public with a great deal of interest. Local railroads in Austria have, generally speaking, been disappointments to both their owners and the patrons—to their owners, because they are not profitable; to the public because their passenger service is insufficient. The railroad motor cars, which accommodate from twelve to twenty passengers, are expected to fill a long-felt want. They are comparatively light, carry no unnecessary incumbrances, and can be operated at a small expense

Motor Trucks Versus Horses in Winter.

Unusually Icy Condition of Streets Furnishes Conclusive Proof of Superiority of the Power Commercial Vehicles.

No better demonstration of the reliability of the automobile for business purposes could be made than has been afforded in New York city this winter. The heavy snowfalls, followed by alternately thawing and freezing weather, has made the going unusually difficult and ordinary vehicle traffic of all kinds has been much impeded. Stalled trucks and fallen horses have been common sights on the streets, especially on the numerous hills, and much delay, inconvenience and even loss in the delivery of goods by horse-drawn vehicles resulted.

This was particularly true in the case of the heavy trucks which ordinarily carry loads of from two to five or six tons. Even by doubling up the teams and reducing the loads by half or more, it was difficult to maintain the service, and large numbers of horses were crippled by falls and had to be killed, or sustained sprains by slipping on the icy pavements that necessitated their temporary retirement from use. The heavy engines and trucks of the Fire Department had a particularly hard time and during the progress of a big fire at the West Side Lyceum on upper Broadway no less than three pieces of apparatus with fallen horses were seen within a single block. One of them was so badly stalled that it was not until a passing automobile truck went to its assistance and gave it a boost that it was able to get started again. The lighter delivery wagons of the large stores, which are seldom overloaded, had less trouble than the heavier vehicles in the deep snow but were at the same disadvantage when the going was slippery.

Meanwhile, automobiles of all sorts and sizes made their way about town with almost unbroken regularity and the heavier motor trucks in use by many of the larger business houses made a particularly creditable showing, not only making the usual trips in the city but even to the suburbs. These results were apparent to any observer of local traffic conditions, but in addition the testimony of a number of prominent users of business automobiles has been obtained by THE AUTOMOBILE and is given herewith.

Truckmen Apply for Motor Aid.

The Ranier Company, which has supplied more than 400 electric trucks and delivery wagons to business firms in New York and the vicinity and houses and cares for the vehicles of many of its local customers, reported no interference with its patrons' business on account of recent weather conditions.

"We have 110 commercial vehicles and fifty hansoms and broughams belonging to private customers in our two garages at 50th Street and Broadway and at 27th Street and Ninth Avenue and all were operated as usual," said M. Ranier. "We had two towings on one very stormy evening, but that was the highest number in any one day. The vehicles not only made their usual trips in the city but to Staten Island, Bayonne, Yonkers and other suburban points where the going was much worse than in town. The big trucks which the Simpson-Crawford Company and other large drygoods houses use to take goods in bulk to their distributing depots in Harlem and other distant parts of the city made their trips without interruption and carried their full loads.

"Moreover, we had from twenty to thirty calls a day from truck owners who wanted to hire automobiles to help out with their hauling, but of course we were unable to furnish them. One downtown concern that has eighty-two horse trucks, told us they had to double up their horses and reduce the size of their loads by half and yet they had thirteen horses disabled in one day. We are figuring with them now for a supply of electrics. And that is only one of twenty or more similar cases which have come to our knowledge. In fact, our estimate department has been kept busy with applications for more than a week past."

No Interruption of Express Service.

F. H. Wright of the Adams Express Company, which operates thirty-five electric wagons and three steam trucks, said: "Our automobiles behaved admirably and we had no trouble with them in even the worst weather. Their average haul is twenty-five miles and we sent them out with full loads."

The manager of a large Broadway carpet house that has an equipment of four two-ton electric trucks and sixteen two-horse trucks, said: "For your information I will say that our electric trucks did much better in the slippery weather than the horse-drawn vehicles, but we do not wish to be quoted by name, as your previous mention of our automobile delivery service brought us such a flood of letters of inquiry from all over the country that we became tired of answering them. They are coming in yet and we do not wish their number to be increased."

Daily Winter Sight-Seeing Trips.

The American Sight-Seeing Coach Company operates a huge electric passenger brake carrying thirty-nine persons, making two trips daily about the city, passing the principal points of interest to sight seers. "Not only have we made our regular trips," said Mr. White at the company's office, "but on Thursday evening of last week (January 28) we carried a party of thirty-eight persons over to Brooklyn to attend a hockey game at the Clermont Rink and back in one of the worst storms of the year. In spite of the large load and the heavy going the round trip was completed without mishap."

Motor Wagons Best on Icy Streets

"We have twelve electric delivery wagons, an extra set of batteries and five-horse wagons, making practically eighteen vehicles," said Manager Horn, of the delivery department of Saks & Co., "and as we have only thirteen routes to cover, we managed all right. On slippery pavement the automobiles are harder to get going than the horses but of course when they are once under way they keep going far better than the horses. But in the deep snow the comparison is vastly in favor of the horses."

Snow Packs in Front of Wheels.

"We have four combination electric and gasoline trucks, each of which will carry from fifty to sixty half-barrels of beer," said Manager Fred Ruppert, of the delivery department of Jacob Ruppert's brewery, "and in icy and slippery streets they go better than the horses. With deep snow they are good things to leave at home, as the snow packs in front of the wheels and stops them."

Ambulance Service Maintained.

One of the most severe forms of service which can be exacted of a vehicle is the hospital ambulance service which is always of an emergency nature, but so far as could be ascertained this service was satisfactorily performed by electrics even during the worst of the recent weather. "We ran our ambulance as usual," said the superintendent of the Lying-In Hospital at 17th Street and Second Avenue, "and had our usual number of calls."

At Roosevelt Hospital it was learned that their electric ambulance, which was one of the first vehicles of its class made, had not been in service since November last, as the batteries were worn out.

Motoring in France is the name of a new monthly automobile periodical published in the English language in Paris. The first number has just been received. It is an attractive paper of 30 pages, nicely illustrated and well printed. It is edited by R. T. Collins, and its purpose is clearly stated in the introduction as follows: "It is the intention of the new publication to summarize the technical progress of French automobilism so that English speaking peoples may be kept in constant touch with what is going on in France. It will, at the same time, thoroughly cover the French sport and pastime."

When will the fast-narrowing time of the automobile mile reach zero? I mean when will the machine get there as soon as it starts?—BILDAD in *New York World*.

Hints for Buyers of Gasoline Cars.—III.

Importance of Easy Access to Clutch Face—Planetary and Sliding Change Gears Discussed—Brakes and Differential.

By RENE M. PETARD

The Clutch.

The clutch must be easy of removal, as it sometimes occurs that oil or dust gets on the leather face of the male member, or that excessive slip causes this leather to burn, in which cases the leather has to be changed. In most cases, up to the present year, the transmission case or motor had to be taken out from the car to make this change. In this year's New York show it was observed that in many cars the designers had taken steps insuring the easy removal of the clutch without disturbing any other important part of the car.

In some cases this was effected by the use of universal joints between the clutch and the change speed box, the other end of the clutch shaft revolving in a bearing cut in the end of the crankshaft, as was shown in the sketch of the thrust-taking-up clutch which was printed in Part II of this series last week.

On a French car, the Delahaye, there is a device which allowed the leather to be removed from the male member of the clutch without taking out any important part of the power plant.

Referring to the illustration herewith reproduced from *La Vie Automobile*, it will be seen that the outside of the cone carries eight transverse grooves of semi-circular section on its face, and, instead of being fastened by rivets or screws, as usual, the leather is simply held by eight T bolts, T T.

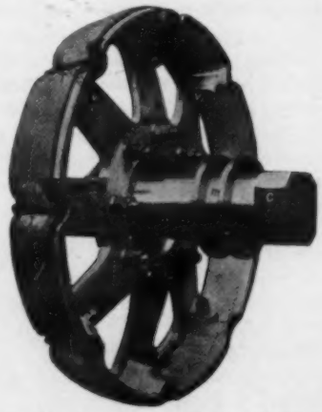


FIG. 1.—THE DELAHAYE CLUTCH.

The top bars of the T bolts hold the leather in the grooves while the stems of the bolts pass through the rim of the cone and are secured by nuts, *v v*, and lock-nuts, thus holding the leather fast to the cone. Such a device permits the removal of the leather quickly and does not oblige one to take apart of lot of clumsy machinery which is difficult to set back in perfect alignment.

Passing now to other forms of clutch, we find a clever disposition in the very latest cars, which was to be noticed in the Thomas light car. In this type of clutch

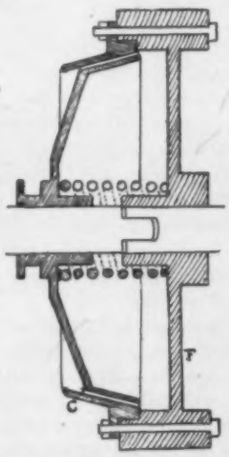


FIG. 2.—INTERNAL CLUTCH.

the female member, instead of being cut in the flywheel, is formed by a cup *C*, Fig. 2, bolted on to the flywheel and against which the male member is pushed by the spring. It will be seen that in such a disposition of the parts the spring rests against the flywheel and pushes the male member away from it. Consequently all end thrust is taken up in the device itself. Besides, it is claimed that the leather of the clutch is better protected from the grease, dust and mud. In this instance, too, the removal of the leather is facilitated since the mere unbolting of the cup *C* exposes it entirely

This can be considered as the most perfect type of conical friction clutch now in use, and it is the writer's own belief that it will be found to a great extent in next year's cars.

An entirely different type of friction clutch is found on the De Dion cars, in which each set of gears on the change speed gear contains an internal expanding friction clutch. In this clutch a ratchet *A* meshes with two pinions *b b*. If the ratchet is pushed the pinions will revolve and, with them, the left and right hand screws *S* which are cut solid with them; the action of the screws will force the two segments *J* against the inside of the rim of the gears, at the same time releasing the segments of the other set of gears, since, in this change speed mechanism, as applied to the De Dion cars there are only two speeds. The claims for this device are that it runs cooler than any other kind, as it runs in oil, and that, being entirely enclosed, it is absolutely dust and dirt proof. However, in such construction there is always the possibility that particles of steel from the wear of the gears will gather in the oil of the gear case after long use and come between the segments and the rim of the gears, thus impairing the good working of the apparatus.

Another kind of friction clutch, as applied on the Automotor car, described last week, is a novel idea which, if it proves as good in practice as it seems to be in principle, will certainly meet with great success.

Besides the friction clutches, there was observed at the show, on the Mercedes cars and on several other cars using the flywheel as a fan to induce a current of air through the radiator and in which the usual kind of clutch would be an obstruction, an entirely different device. In this type of clutch a spiral spring, one end of which is fastened to the flywheel hub, is caused to drive the change speed shaft when its other end is properly engaged, at the driver's will, with a cam mounted on said shaft. We will not go into details in regard to this type of clutches, as they are to be found only on a few models of cars and their design varies with each manufacturer.

Change Speed Gear.

On the American market we find two different kinds of change speed gears—the planetary and the sliding gear. The planetary gear seems to be better adapted for use on light cars, if we judge by the extent to which it is used in this country on such vehicles. Although it appears that this device is rather cumbersome, it has the advantage that it dispenses with the use of a clutch, and this may be considered as making up for the extra space and weight.

In the show we did not find any great changes in the design of these gears. They

FIG. 3.—EXPANDING CLUTCH.

can stand a lot of rough usage, thus making them excellently suitable for light all-around cars to be used by inexperienced drivers who are liable to be careless in the handling of their machines.

Passing to the sliding gears, we find great improvements in their design. First is the almost universal adoption of the direct drive on high speed. This direct drive is obtained by several different means The one most extensively used consists of cutting on the hub of the sliding member a spider which, when this gear is pushed forward to its full extent, meshes with a corresponding spider cut on the shaft, thus making the crankshaft, clutchshaft and

main transmission shaft turn as a solid shaft.

Provision was made on several cars for a gutter or groove at the bottom of the gear case to collect and retain the grit from the wear of the gears so that it would not mix with the oil splashed by the gears and cause more wear. This is a point which the buyer of a car with sliding gear transmission should look for on the car, as when the grit is allowed to work back on the gears with the oil it increases the wear and shortens the life of the gearing.

Ball bearings are used to some extent in a few cars—not quite so much, though, as abroad, where they were one of the characteristics of the last Paris show. When such bearings are properly designed and hardened, there is no doubt that they increase greatly the efficiency of the machine and largely reduce the consumption of oil.

In the Locomobile car the transmission case is made of three parts. A bronze case carries all the gears and bearings and sustains the entire strain, the upper and lower parts being light aluminum castings used simply as dust covers. This is a very good arrangement as it permits inspection and thorough cleaning of the gearing without disturbing the alignment in any way. A noticeable feature of the Toledo car is that the countershaft and the chain sprocket shafts were made concentric, the change speed case being placed in a transverse position across the frame of the machine.

Transmission.

The transmission from the change speed case to the wheels was effected on the majority of the cars seen at the show either by chain or live shafts. The manufacturers seem to be equally divided between these two forms of transmission, the double chain being used mostly on high power cars and the shaft and single chain on the light cars. Advocates of the double chain drive claim for it greater mechanical efficiency and greater simplicity than the live shaft. They also assert that as in live shaft construction the differential is on the rear axle, the axle is much weakened and is not as well fitted to stand the severe strains to which it is subjected. Advocates of the live shaft, on their side, claim greater reliability and absence of noise with the bevel gearing. As a matter of fact, it seems that chains are more subject to trouble in bad weather than the live shaft, but they are lighter than the shaft and gears and, when high powered machines are considered, are cheaper of construction. Chain drive necessitates the use of tension or distance rods, and the buyer of a chain driven car should see that these rods are substantially built and of suitable strength. As a rule tension rods are not used on shaft-driven cars. There are some exceptions, however, and in these cases they have proved useful, as they relieve the shaft from many strains that would impair its satisfactory working and which, by causing unnecessary torsions, would waste a large part of the power of the motor. In several instances it was noted that only one universal joint was used in live shaft construction. This is to be preferred to the use of two joints, as these joints necessarily cause friction and also increase the cost of manufacture. In some shaft-driven cars the change speed box, instead of being hung in the frame in the usual manner, is carried back and cast in one piece with the differential gear box. This is quite a satisfactory disposition of the parts and should prove very efficient. It is to be found in some of the best cars both abroad and in this country.

On the Walter car, as well as on a few French machines, we find a device which it may be hoped will be more extensively used in next year's cars. It consists of a spring drive meant to take up the sudden shock given by the motor when starting and also the various shocks caused by the unevenness of the road when driving at high speed on heavy roads.

While on the subject of drive is should be remarked that in the Oldsmobile there is a clever device for adjusting the tension of the chain. It allows the position of the entire rear axle to be varied on the springs by means of two set screws, thus changing the distance between the change speed box and the differential.

Brakes.

The almost entire disappearance of shoe brakes on the tires was to be noticed in the last Paris and New York shows This is not to be deplored, as these brakes, although efficient, are most destructive of the tires. Two general types of brakes are used—the band brake and the jaw brake, both being made either internal or external. The internal brake is rather a novelty. It was to be found on only a few cars last year while this year all the better and higher priced cars were fitted with such brakes, which have the advantage over the band brake of being better protected from oil, dust and mud, thus keeping the braking surfaces in better condition.

The buyer of a car should always insist on having his brake made to act both ways; that is, that the brake should hold just as well when the car is moving backward (as, for instance, when it starts backward down a hill) as when it is going forward. He should also see that no journals or heavily lubricated parts are located in the neighborhood of the brakes, as oil from these parts might run between the brake and the drum and impair their good working. The subject of brakes will be more extensively dealt with in a subsequent article, as it is a most important matter.

As a rule, three brakes are to be found on most cars, two of them on the hubs and one, called the emergency brake, on the transmission. The position of this third brake varies with the different models of cars. In some cases it is found on the differential, in others on the live shaft or countershaft, and in one case, the Covert runabout, in the clutch. It seems that when this brake is placed on parts running at a high rate of speed, such as the clutch or countershaft, its efficiency will be greater since the friction increases with the speed.

On many cars this year there is a connection between the clutch and the brake, so that when the brake is applied the clutch is automatically released. This appears to be a good point, as it increases the convenience in operation, allowing the driver to stop his car by the movement of a single pedal, while it formerly took two distinct operations However, on most cars this is obtained by means of rather intricate levers and rods. On the Covert runabout is a simple and efficient device giving this result with as small a number of parts as possible. In this brake the male member of the clutch carries on its rear face a leather band which is brought into contact with a stationary disc when the clutch is released. There is only one defect to be found in brakes acting on parts revolving at high speed. It is the tendency to overheating, which is greater in these brakes than on the ones mounted upon slower revolving parts, but this is well made up by increased efficiency, as proper design easily overcomes this objection.

Differential.

One of the most important parts of a car and one that is generally neglected by purchasers when looking over the car they intend to buy, is the differential gearing. Great care should be taken in selecting the design of this part, although this is more the manufacturer's business than the buyer's. Too weak a differential, in which wear will take place too rapidly, will make necessary the renewal of the most important parts of the car and require almost complete overhauling of the machine.

There are two types of differentials on the market at present—the spur gear and the bevel gear differentials. The bevel gear is the one used abroad to the greatest extent, while the spur gear seems to be the one most in favor in this country. It seems that the bevel gear differential contains fewer parts, while the spur gear, on account of its construction, is cheaper to manufacture, and no doubt, gives just as satisfactory results. Provision should be made to allow of easy lubricating of the differential. The lubrication is generally accomplished by filling the case with a mixture of grease and graphite; but, although it has not to be done very often, there are occasions when the removal of the lubricating mixture has to be effected. In some instances it necessitates the taking apart of almost the entire rear axle, which is most annoying and can seldom be done by the user himself. It was pleasing to notice at the Madison Square show, that in many instances the differential casings were fitted with hand plates, allowing easy inspection and lubrication of the parts.

(To be Continued.)

Personality of the World's Record Holder.

For many years the name of Vanderbilt has been synonymous with wealth, luxury, ease and pleasure. Many have marveled therefore that a scion of this family should devote so much to the strenuous sport of automobile racing as does William K. Vanderbilt, Jr., who now holds the world's mile record of 39 seconds.

Almost from the beginning of the new sport Mr. Vanderbilt has spent much time in the careful study of the automobile from a mechanical and practical standpoint. His exceptional knowledge of gas engines comes, not from theory or superficial research, but from that intimate acquaintance and experience both in construction and operation which implies overalls and grease. He has spent days at a time in the practical study of automobile construction in a number of foreign factories, and it is not surprising that when experience in operating under all conditions is added to such study he has been able to attain the foremost rank as a driver and mechanical expert. His performances in road racing and contests abroad are more or less familiar to his compatriots through press reports and even before his recent work at home he was believed to be one of the best road drivers in the world, and observation of his work on Eagle Rock Hill and on the Florida coast confirms the opinion.

To successfully drive a powerful racing car at top speed requires not only skill and knowledge, but also daring and cool judgment, and to attain to a place among the best drivers of the world requires the development of these attributes to an exceptional degree. But their development requires ambition, study and practice. Herein is the secret of Mr. Vanderbilt's success: he has the ambition to win and rank first among famous operators. he has the willingness to study and gain experience by hard work and practice, and finally he possesses an iron nerve and a cool head.

Apologized for Breaking Rule.

One of the first opportunities of seeing Mr. Vanderbilt drive in this country was last fall in the Eagle Rock Hill contest. His remarkable performance of a mile uphill and around curves in 1:36 3-5 demonstrated more than the speed of his car; it revealed clearly to all who saw him his skill and daring. He has been in hill-climbing contests abroad, but after trying Eagle Rock he said that it was by far the worst to negotiate of any he had ever seen.

A little incident occurred at the Eagle Rock event that shows another phase of the man's character. After his first ascent of the hill he turned and started back so quickly that the official at the top was unable to request him to stop when halfway down in order not to be in the way of the next contestant coming up, and he rushed by the halfway point, not understanding the signals of the official there. Upon his second trial the system was explained to him at the top of the hill and as he stopped halfway down he said: "I beg your pardon for not stopping last time. I did not understand and my car made so much noise I could not hear what you said."

Unfailing courtesy and consideration and willingness to comply to the letter with every rule and requirement is one of the best qualities of a true sportsman. Mr. Vanderbilt is invariably courteous and considerate, and the officials and contestants in the recent Florida races are all warm in their appreciation and admiration of his conduct.

Practiced Assiduously.

Almost the first to arrive at the beach, he began a systematic course of practice and experiment. Every morning he was on the beach early, trying out his car and tuning it up to concert pitch. Each day he drove back and forth on the beach many miles, indifferent to unpleasant weather. Several mornings he was up at 5 o'clock and by shortly after 6 was hard at work either in the garage or on the beach. It is doubtful if a single one of the contestants spent as much time with his car as did Mr. Vanderbilt with his big Mercedes. That his car was in perfect condition by the time the races began was very largely due to this careful course of preparation.

There was not the same call for courage on the beach that is required in road races, and yet there is a certain element of danger in driving at the rate of ninety miles an hour even on the safest course in the world; and it certainly requires skill to get such speed out of any car no matter how powerful, and a steady hand and nerve to keep it straight on its course.

Of no one on the course could it be so truly said that "he was a part of his car" as of Mr. Vanderbilt. In starting and turning, as well as on the straightaway, he handled the big machine so easily and perfectly that it seemed as if the car was in sympathy with the driver and possessed of the animal power to obey his slightest wish. During all the meet there was not a single slip in the handling of the machine.

There were two interesting incidents in the fifty-mile handicap. One was at the starting line where the cars were sent away at one-minute intervals from a standstill. Mr. Vanderbilt was the last to start and as there were five ahead of him he stopped his motor. When it was within a minute of his starting time his mechanic turned the engine over but without success—it is difficult to start so large an engine—and the officials feared lest it would not start in time.

"Fifty seconds," said the starter. Another but no more successful attempt was made. "Forty seconds." Mr. Vanderbilt was the only unconcerned one in the group. "The carbureter," he said to his mechanic. "Thirty seconds," said the starter, as the great hood was lifted. Another attempt to start without success.

"I'll be ready to go," said Mr. Vanderbilt coolly as the starter called "Twenty seconds." A few words in French to the mechanic and the hood was lifted again. Another trial without result and it was only "ten seconds more." "It's all right," said the driver easily to the nervous officials. "Some one help him turn the crank." A willing hand took hold as the starter announced "five seconds." The great motor started with a roar and the crowd had just time to get out out of the way as the starter said "go," and the big machine jumped away from the tape with a driver as cool as though getting away by so close a margin were an everyday occurrence.

Away down the beach sped the car, faster and faster after those who, minutes before, had disappeared in the distance. Then, after a wait of about fifteen minutes, a small black speck appeared against the dull background of sand and sky. As it came nearer and nearer and grew in size every one asked, "Who is it?" On it rushed and presently the cry went up, "It's Vanderbilt." Then a period of suspense and anxiety. Will he make the turn safely? Needless question; the car came flying on at full speed to within a few hundred yards of the obstacle in the middle of the beach around which it must turn. Then it began to slow down, not suddenly nor with a jerk, but gradually, and curved slightly toward the ocean. With diminished speed calculated to a nicety, it began to circle around the post. Not a tremor nor a slip was seen as, with the grace of a beautifully balanced yacht, the car rounded the post, clearing it by a few feet only. As it darted away down the course again, gaining speed with each rod, the crowd broke forth in cheers and exclamations of surprise and admiration.

Photographed on Toss of Coin.

Mr. Vanderbilt is essentially modest and somewhat retiring both in manner and disposition. He dislikes to pose for photographers although naturally much in demand by them. There were many professional camerists at the Florida meet and he generally yielded gracefully to their requests for pictures provided they did not ask for a special pose.

On the last day, as he was standing near his car at the starting line, a photographer asked the privilege of taking his picture. "Well, I suppose I can't help it, so go ahead," said he. "O, but I want you in your car," said the photographer. Mr. Vanderbilt declined to pose and the photographer pleaded that he had taken all the others and that it really meant a great deal to him to have this picture Then

(Continued on page 205)

Gasoline Engines for Marine Propulsion.—II.*

Comparison Between Motor Requirements in the Automobile and the Motor Boat—Two and Four-Cycle Engines—Description of Typical Installations in High Speed Launches.

By D. H. COX.

In appearance the many makes of gasoline engines are not dissimilar, and one becomes familiar with them through the illustrations crowding the advertising pages of all the present publications, even if not having had any actual experience with the engines themselves. Fig. 1 is an engraving of an engine of the two-cycle type, manufactured by H. J. Leighton of Syracuse, and Fig. 2, of a new design four-cycle engine, made by the Standard Construction Company, called the Standard motor. The enclosed crankcase of the two-cycle is clearly contrasted with the steam-engine effect of the four-cycle machine, although in certain four-cycle engines the crank space is enclosed by a non-air-tight case.

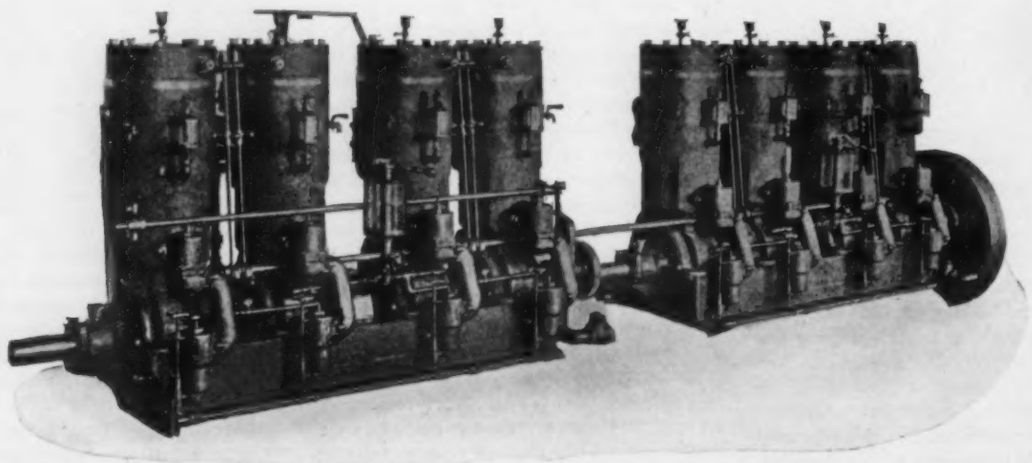


FIG. 1.—LEIGHTON EIGHT-CYLINDER, TWO-CYCLE, 120-HP. ENGINE USED IN SPEED LAUNCH "ADIOS."

As the Standard engine in question was placed before the public for the first time last summer, being the outcome of years of experience in such work by the Riotte brothers, and as it possesses many novel features, and is considered to be one of the most rational and well worked out gasoline engines now on the market, a description of its principal points of interest will be given. The engraving shows the general construction very plainly. The six cylinders are each 8 inches in diameter by 10-inch stroke, and are cast in groups of three, bolted together in the middle. The valve chests are bolted to the back or starboard side of the engine, and contain the inlet and exhaust valves with their controlling rods. The engine bed consists of heavy fore-and-aft rolled sections to which are bolted the cast steel cross framing carrying the bearings. The engine columns are forged and cross braced and the whole, with the exception of the 24-inch flywheel, is not unlike a marine steam engine in appearance.

The weight of engine, as shown in the illustration, is 3,200 pounds, a very heavy weight when compared with automobile engines, but not excessive for marine work, particularly when one realizes the enormous saving in the weight of boilers and auxiliaries necessary for a steam plant and not required for gasoline. The length over the bed, including flywheel, is 72 inches, and the height from bottom of flywheel to top of cylinder heads is 50 inches.

The starboard side shows the large exhaust leads running from the bottom of the valve chests down to the main exhaust line which runs aft to the muffler in the stern of the boat. The supply pipe is seen in this view running along the top of the cylinders, the inlet from the vaporizer joining this lead opposite the second cylinder from the flywheel end of shaft; the vaporizer does not appear in the engraving, but is situated in the boat directly below this inlet.

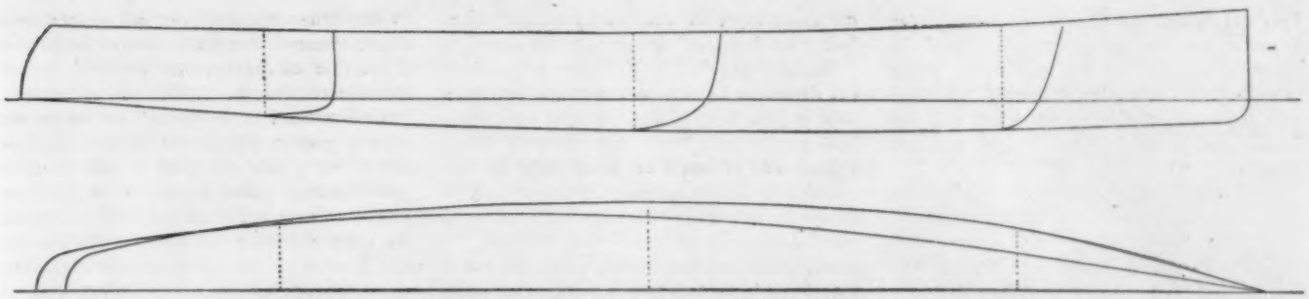
At the after end of the shaft is shown a pump which supplies compressed air to a reservoir in which the pressure is carried at about 150 pounds. This compressed air is used for starting the engines and manipulating them in close quarters, being led into a supply pipe controlled by a throttle feeding the three forward cylinders, just below the gas supply. The main camshaft (which is the upper shaft with a pinion at one end) and the auxiliary camshaft (the shorter one below the main shaft) control the inlet and exhaust valves for vapor and compressed air, respectively, by means of cams, the main camshaft being rotated by a two-to-one worm and miter gear from the engine shaft. These shafts each have two sets of cams, one for ahead work, the other for reversal, a motion of translation along their axes permitting either set to be in action as desired

A horizontal lever working over a notched quadrant controls this motion of the camshafts and also the compression valves, while a continuation beyond the fulcrum closes the sparking circuit when thrown hard over either way. The valve to the compressed air reservoir being open the engine will start up ahead or astern when the horizontal lever is moved from the center notch on the quadrant to the first notch to starboard or port, respectively, the compression being released when the lever is moved from the central position either way. The engine can now be run for a considerable time under the air pressure, which is carried at 150 pounds, while 5 pounds is sufficient to turn over with no compression.

A vertical lever close at hand regulates the timing of the spark, and the throttle to the gas supply which works over a calibrated arc is near the latter. The needle valve at vaporizer being set, and the horizontal lever being thrown over to the extreme notch on the quadrant, the engine commences to run as a gas engine, the rate of turning being directly controlled by the spark lever and gas throttle, and the direction of rotation depending on which side of the quadrant the lever is set. Thus the operations of starting and stopping are very similar to those required in the control of a steam engine; the camshaft and air and gas lever corresponding to the valve gear, and the speed regulating devices, corresponding to the throttle.

After a considerable experience with this engine, I have not once seen or heard of its failing to function promptly and

* From a paper read before the Society of Naval Architects and Marine Engineers in New York.



PROFILE AND PLAN DRAWINGS OF THE 55-FOOT MOTOR BOAT "ADIOS."

properly when called upon, and believe that the control is most satisfactory.

The water circulating pump is under the air pump, and supplies the jackets through the riser shown between the two central cylinders on the port side with a branch to each cylinder. The jacket circulation escapes into the exhaust pipes through small tubes extending some six inches down into these pipes, thus cooling the exhaust line.

All the mechanical details of the engine are carefully worked out, the bearing surfaces are large and well lubricated, and the parts of the several cylinders are interchangeable. The engine runs with almost a complete absence of vibration, merely a scarcely perceptible tremor, and the fact that continuous running during the process of stopping and reversing, as well as the necessity for friction clutch and gear or feathering wheel are done away with, and complete control secured with rotation of the shaft in either direction without the use of gearing, are all points much to the credit of this engine.

The most interesting phase perhaps up to the present of gasoline engine use has been in the various types of racing launches and a description of a few of these will not be out of place. Mr. H. T. Leighton, the manufacturer and designer of the 120-horsepower two-cycle engine shown in the illustration, has turned out a great number of fast boats. The *Adios*, in which the engine just mentioned is installed, is his highest powered boat, and is credited with a speed of over 24 miles an hour. An official test over measured mile gave her 23 miles and a fraction, and since then her performance has been improved. Her particulars are:—

Length over all.....55 feet 0 inches.
Length L. W. L.....55 feet 0 inches.
Beam at L. W. L..... 6 feet 6 inches.
I. H. P..... 120.

The engine makes 475 r.p.m., and the wheel is 3-bladed, with 32-inch diameter and 72-inch pitch. From this it will be seen that her performance is excellent.

The most conspicuous power boat in the neighborhood of New York harbor at the present is the *Standard*, in which is installed the engine of the same name previously described at some length. Her speed is somewhat problematical, her builders not having been satisfied with the wheels used this season and not having wished therefore to run her over an official course. Judging from what has been seen of her performance it is safe to say that she can run along very handily at 20 miles and probably will reach 22 with a proper wheel. Her particulars are:

Length on water-line...58 feet 0 inches.
Beam, extreme ..... 7 feet 6 inches.
I. H. P..... 110
R. P. M. about..... 400

The general form of this launch is not unlike that used by Normand in his high speed work, and undoubtedly is well adapted to the purpose as it drives well both in smooth and rough water. The contour below the water-line is nearly straight from the greatest depth at the forefoot to the bottom of the transom aft, the necessary lateral plane for steady steering being secured by a false deadwood. The stern is chopped off straight up and down, the transom being wedge-shaped, which seems to have the effect of making a vessel leave the water more cleanly than the square-across transom. All the sections, except those well

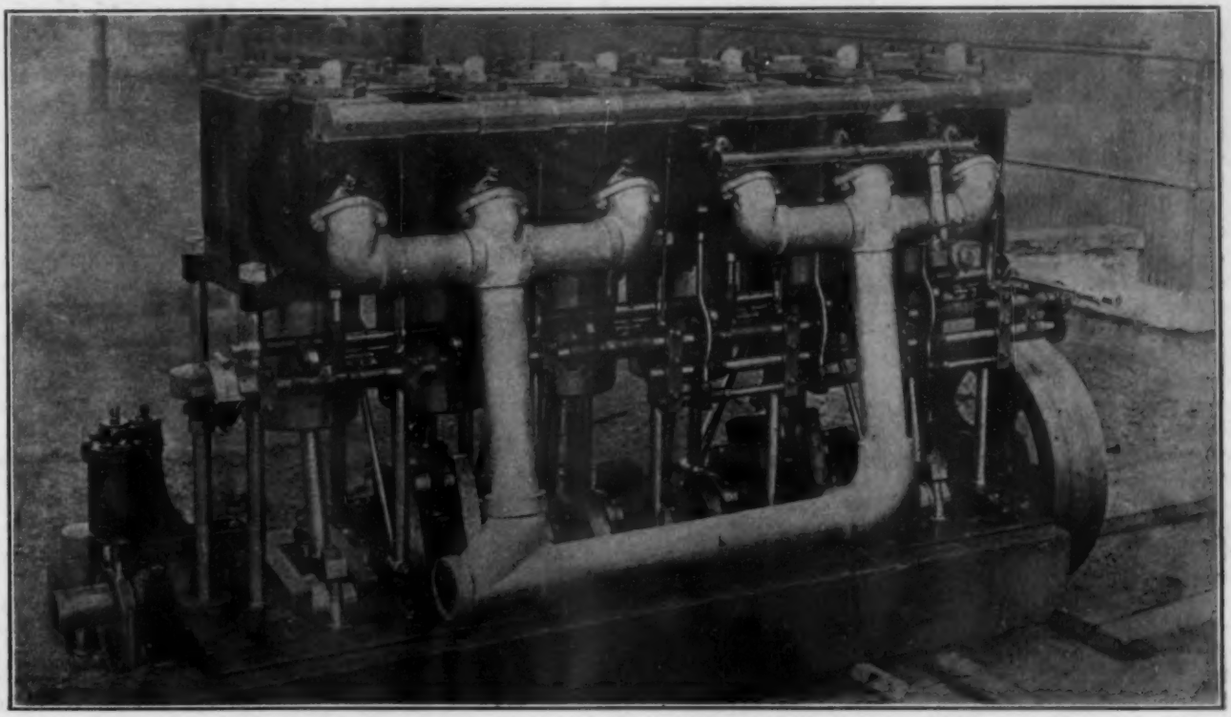


FIG. 2.—SIX-CYLINDER, FOUR-CYCLE, 110-HP. STANDARD ENGINE, SHOWING UNENCASED CRANKS.

forward, where considerable flare is given to make her dry, are quite round, and the center of gravity of the load-water plane is well aft of the center of length. Her design is not in any sense extreme, and her lines could be used to advantage in larger vessels.

On a recent run to Nyack and back from the Columbia Yacht Club in half a gale of wind, the water being very rough, particularly in the shallows near Nyack, the trip up and back, about 40 miles, was covered at an average rate of about 19 miles an hour; this with the engines somewhat throttled down Under these trying conditions she behaved remarkably well. The engine required no attention whatever from start to finish, notwithstanding the heavy strain imposed upon it by driving through the seas, and the constantly varying load as the seas passed under her counter. The hull proved exceptionally dry under the circumstances, and there was no difficulty in steering, even with a quartering sea. No evidence of distortion of the hull while driving hard in a seaway have been noticed, although the construction is exceedingly light, as will be seen from the detailed description that follows.

There are three small cockpits about four feet wide, being used for steering, engine space, and passengers, respectively, commencing forward. One gasoline tank is carried forward in the peak compartment and another aft of the engine compartment. The method of construction is novel. The planking is of 3-16-inch mahogany, worked in one thickness in planks about eleven inches wide, flush. The seams of these planks are centered on fore-and-aft strips about 2 inches by 1 inch, each plank edge being secured to these strips by brass wood screws, let in flush and closely spaced. The timbers are spaced 8-inch centers, except towards the ends where the spacing is more open. They each consist of two narrow steamed oak strips about 3-4 inch by 1-4 inch, one on each side, of the longitudinal strips, being let into and secured to these strips.

Rigidity is given to the hull in a fore-and-aft direction by a truss running along each side of the line of the cockpit coamings. The upper and lower members of these trusses are of wood of substantial dimensions, and the compression members are of gas-pipe, the cross bracing being made of several strands of steel wire, twisted to produce the required tension by means of a metal rod lashed to prevent the twist coming out, and allowing adjustment if required.

As stated, the hull is sufficiently rigid to withstand the strains produced without undue distortion, but the extreme thinness of wood between ones self and the water when driving at high speeds, is an unpleasant subject of thought, when the effect of running into any floating spar or wreckage is considered. About the only trouble experienced with this hull has been the tendency of the planks to buckle, as there is no way of taking up the expansion, the seams being a neat fit. As the plank is screwed on it can be removed when required and the seams and edges eased off.

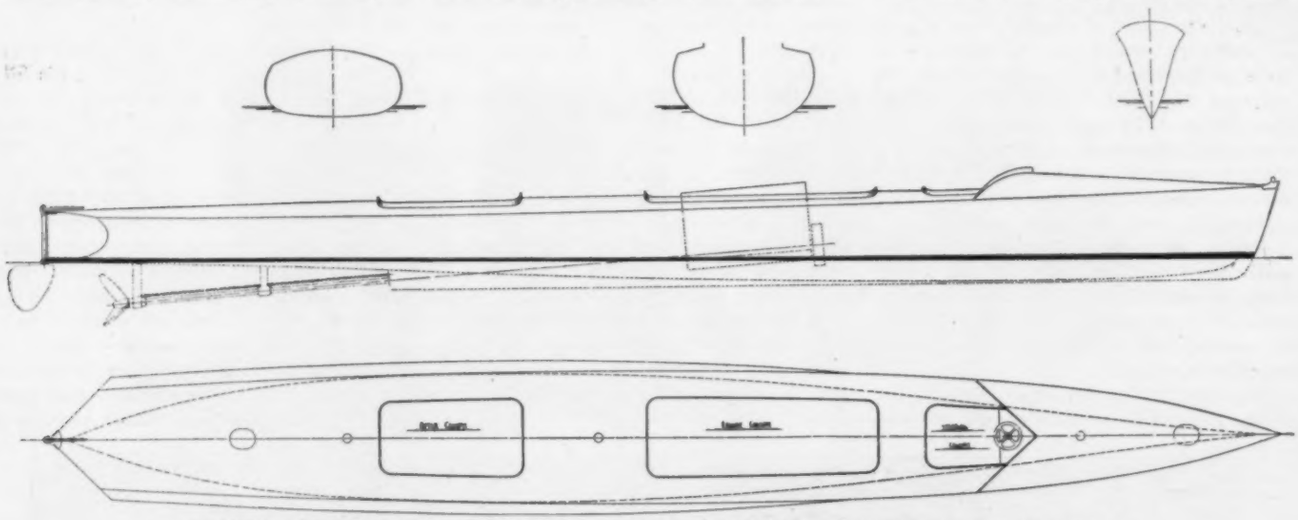
The success of the flat-sterned launches with the center of gravity of the load water plane well aft has led to many peculiar developments in the way of freak designs, with some of which remarkable results have been obtained.

There are other launches built or building of extreme type that would make interesting subjects of study if their lines were available, but information of this sort is hard to obtain. The general trend of the speed launch design is to make the squat as little as possible by the full water-lines aft, and then to secure a proper entrance at the plane of flotation when under way instead of at rest in the water, much in the same manner as designers now give the inclined water-lines of sailing vessels careful consideration, a fact that at one time was altogether neglected. Success has been met with and the effect so often seen in short launches driven at high speeds of the forefoot completely out of water and a smother of foam under the bow is conspicuously absent.

Unfortunately, in many instances the actual power developed by a gasoline engine of given size and rating is quite problematical, and hence it is hard to arrive at any accurate conclusion regarding the performance of a particular launch, and from it to draw conclusions regarding the probable effect of enlarging one of these models to a size suitable for, say, torpedo-boat work. It would seem, however, that experiments at the model basin with designs on some of the extreme types mentioned might lead to some interesting information for a class of extremely high speed torpedo vessels for harbor work only, as they certainly would not prove a success in a seaway.

The outlook for the continued increase in the use of the gasoline engine for marine work is, in my opinion, most promising, and more particularly in engines of considerable size. Up to the present, the lack of confidence in engines of this type has, for the most part, limited their use either to small launches or to vessels in which the power required was not great, and the installation of more than 100 horsepower in one hull has been quite an unusual event. With the confidence gained from experience with the improved marine engine, owners are now prepared to invest more money, feeling that they run but little risk of disappointment, and next season will see quite a fleet of power boats, from the hands of various designers, that will present many novel features, and with their high power and great accommodations will probably be very popular additions to the yachting fleet.

As an illustration of the saving in room effected, it may be stated that in a 75-foot steam launch of recent design, with water-tube boiler and four cylinder triple expansion engine of 175 horsepower, the total length of boat given up to engine and



TRANSVERSE SECTIONS, PROFILE AND PLAN OF 58-FOOT SPEED LAUNCH "STANDARD."

boiler room was 18 feet, the whole width of the boat as well over this length being taken up to provide for bunker space and auxiliaries. A 175-horsepower gasoline engine would require only an engine room of 12 feet by 5 feet, saving 6 feet in length, and leaving considerable space available on each side of the engine-room hatch. Owing to the absence of auxiliaries two engines of this size, or 350 horsepower, could be installed in this launch in the same 12 feet of engine room. From the weight point of view one 175-horsepower gasoline engine would weigh about the same as the steam engine, thus saving the weight of boiler, piping, auxiliaries, and feed water, as the coal may be offset by the oil carried, the total saving being about 15,000 pounds, or 30 per cent. of the total displacement. Even with 350 horsepower there would still be a saving of about 10,000 pounds over the weight of the 175 horsepower steam engine. In boats of greater displacement and power a proportionately great saving should be effected.

Skidding — Its Causes and Remedies.*

If one considers a self-propelled vehicle in motion it will be noticed that it is under the influence of a certain number of outside forces: gravity, reaction of the ground on the wheels, air resistance, wind pressure and impulses of all kinds.

The external agents counterbalance the effects of the inertia of the vehicle considered as a mere moving mass: they counterbalance the effects of the inertia corresponding to the relative motion of the different parts of the car and last, the passive resistance of the vehicle to motion, this last agent having nothing to do with skidding.

On this basis, Mr. Resal, the author of a theoretical study on the subject of skidding, has divided his work, first determining the resultant of the external forces above named on one hand, and the reactions between the wheels and the ground on the other, before passing to the study of side-slip itself.

Side-slip can only take place when the tangential reaction, perpendicular to the plane of the rim, reaches and exceeds a certain limit, the determination of which gave the following results:

If, with a vehicle moving under the action of its momentum without any other cause, the side-slip can take place from either end of the vehicle under an external influence, it will always take place from the rear axle if the motor is driving or the brakes are applied. Every time that a slip is to be feared, the first step to be taken therefore, will be to release the clutch or the brakes, according to which is in action.

In the second place, the side-slip once begun will stop only if it has been caused by a shock. However, the transverse action causing the skidding will immediately be destroyed, no matter how small the coefficient of friction of the wheel on the ground may be if one has taken care to destroy all reaction in the plane of the wheel by releasing the clutch or the brakes.

If, after the shock, the transversal reaction has not been destroyed as mentioned above, the speed of the side-slip will increase on account of the decrease of the coefficient of friction, and the side-slip will only be stopped by the turning over of the vehicle, which is the necessary consequence of an extensive skid, when the car is going at a high rate of speed.

Practical Conclusions.—To avoid the dangers of skidding the driver is possessed of three means.

First: The steering gear, which permits him to avoid dangerous places, or which allows him, in case of side-slip, to change the direction of the steering wheels to a sufficient extent to create a centrifugal reaction great enough to balance the transversal reaction which causes the skidding.

Second: The motor, which admits of an increase in the speed, reducing the strain on the front axle by increasing the effort on the rear wheels.

Third: The brakes, by which the speed may be reduced, increasing the strain on the front wheels by relieving the rear axle.

It must be borne in mind that the propulsion by the motor or the resistance of the brakes will reduce the ability of the rear axle to withstand the causes of skidding in exact proportion to their own energy.

To pass a dangerous bit of road the best way to act will be to release the clutch and to apply the brakes sufficiently to reduce the speed before the dangerous point is reached, and when about to pass it, to release the brakes and let the vehicle run by its own momentum.

* Translated from a paper written by Lucien Périssé, secretary of the technical commission of the Automobile Club of France and published in "La Vie Automobile."

Personality of World's Record Holder.

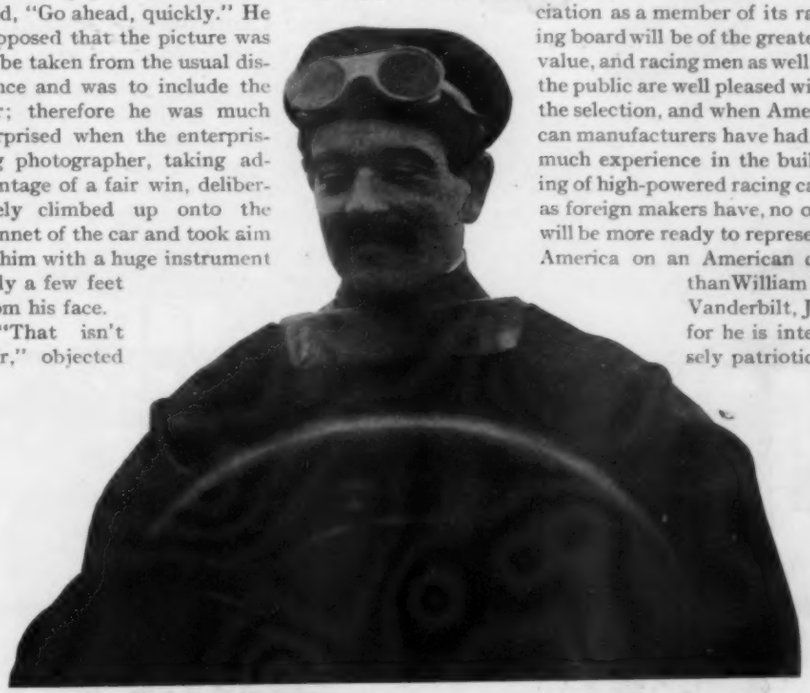
(*Continued from page 201.*)

Vanderbilt yielded to the extent of saying, "Well, I really do not want to, but I will tell you what I am willing to do. I will leave it to the toss of a coin."

The photographer was his match in sportsmanship and assented to the proposition. Taking a coin from his pocket and holding it in his closed hand, Mr. Vanderbilt said: "If it is heads I pose; but if it is tails, I don't." When disclosed the coin was "heads up" and the unwilling poser reluctantly got into his car and laughingly said, "Go ahead, quickly." He supposed that the picture was to be taken from the usual distance and was to include the car; therefore he was much surprised when the enterprising photographer, taking advantage of a fair win, deliberately climbed up onto the bonnet of the car and took aim at him with a huge instrument only a few feet from his face.

"That isn't fair," objected his victim putting his hands before his face. The photographer appealed to the amused group that had gathered, and upon their decision that he had won and could take the picture any way he pleased, Mr. Vanderbilt good-naturedly submitted, although his expression in the finished picture exhibits his discomfiture.

Automobile racing is raised to a higher plane because of the participation in it of such a true amateur sportsman, and Vanderbilt's interest and enthusiasm over racing matters augur well for the good of the sport. The experience that he will bring to the American Automobile Association as a member of its racing board will be of the greatest value, and racing men as well as the public are well pleased with the selection, and when American manufacturers have had as much experience in the building of high-powered racing cars as foreign makers have, no one will be more ready to represent America on an American car than William K. Vanderbilt, Jr., for he is intensely patriotic.



THE PHOTOGRAPH FROM CLOSE RANGE (by Levick, New York)
Reprinted from Issue of February 6.

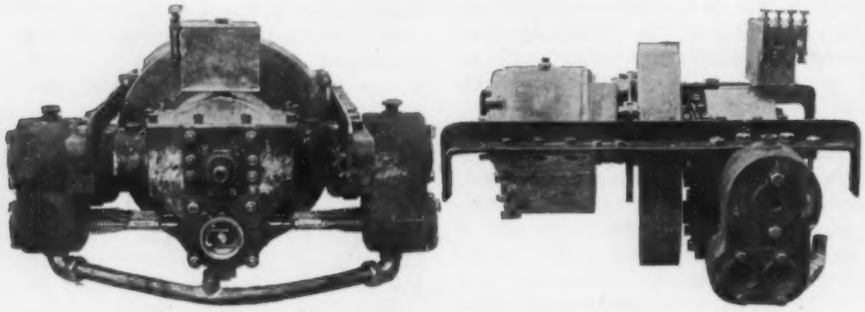
The "Model" Cars.

Cars with power and transmission disposed according to American practice, but with the external lines closely following French practice are the runabout and tonneau machines manufactured by the Model Gas Engine Co., Auburn, Ind. This concern has been building gas and gasoline engines for a number of years, and the motors designed for automobile service are the result of extended experience.

The chassis of the runabout and the touring car are alike except in the size of parts employed and in engine equipment. The frame is angle steel, riveted and welded to make a continuous member. All spring supports are drop forgings and the cross members of the frame are hot-riveted to the main frame. The tanks, batteries, oil reservoir, etc., are so arranged in the touring car that the body may be removed from the chassis without breaking any joints. Cellular radiators are provided for the larger model and the runabout is fitted with underslung bank of gilled copper pipes.

"MODEL" 12-HP. RUNABOUT, WITH OPPOSED HORIZONTAL MOTOR.

The engine of the runabout has two-opposed cylinders of 4 1-4 inch bore by 5-inch stroke and is rated at 12-horsepower, with a range of speed from 200 to 1,000 r.p.m. The engine used in the touring car is the same bore with 7-inch stroke, rated at 16-horsepower and running from 150 to 900 r.p.m. The long stroke is claimed to show great efficiency by reason of the additional room afforded the gases for expansion. The engines are cast with each cylinder and water jacket integral with one-half of the crankcase, and are bolted together in the center with bearings carefully fitted. The crankcase is covered at the top with an aluminum plate, over which is set a pressure-feed oil tank.



SIDE AND END VIEWS OF "MODEL" TRANSMISSION AND ENGINE.

The valves, which are all mechanically actuated are 1 7-8 inches in diameter, with camshafts inclosed in the oil tight crankcase, which is dropped below the crank clearance to provide a housing for the parts. The pistons may be taken down without interfering with the crankshaft, and the engine stripped without removing from the cross frame. Jump-spark ignition is regularly fitted, either with double vibrating coil or the Bullock igniter.

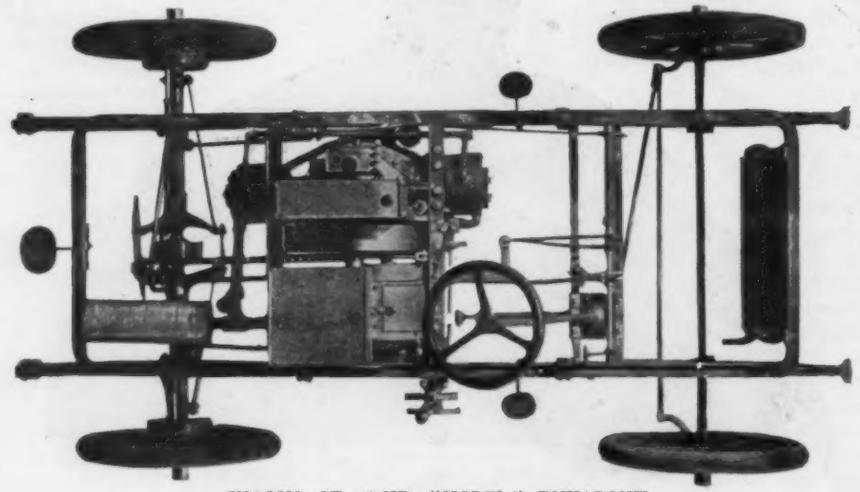
The transmission provides three speeds forward and two reverse, an unusual equipment for a gasoline car. The transmission case is oiltight and made of aluminum. All gears run steel against brass with the high speed driving direct through the clutch with no gears in motion. The clutch is a cast-iron shoe or ring which expands against a corresponding brass surface on the clutchcase which, with the oil bath provided, avoids all tendency of the clutch taking hold with a sudden jerk, the engagement being gradual, so that the car is started or speed changes made without sudden transitions. Two speed levers are fitted.

The drive from the change speed is by chain to differential on the live rear axle. The hub brakes are pedal operated and an emergency brake acting through the transmission is controlled by lever. The engine exhausts into a specially designed muffler of aluminum which is claimed to be an efficient silencer without producing back-pressure.

The two models are a runabout with 12-horsepower engine and a five-passenger tonneau with 16-horsepower engine.

Electric Commercial Vehicles.

The one-ton quick service electric wagon manufactured by the Electric Vehicle Company of Hartford, and illustrated herewith, is one of a type of two-motor drive commercial vehicles having carrying capacity up to five tons. A thorough test of these wagons has been

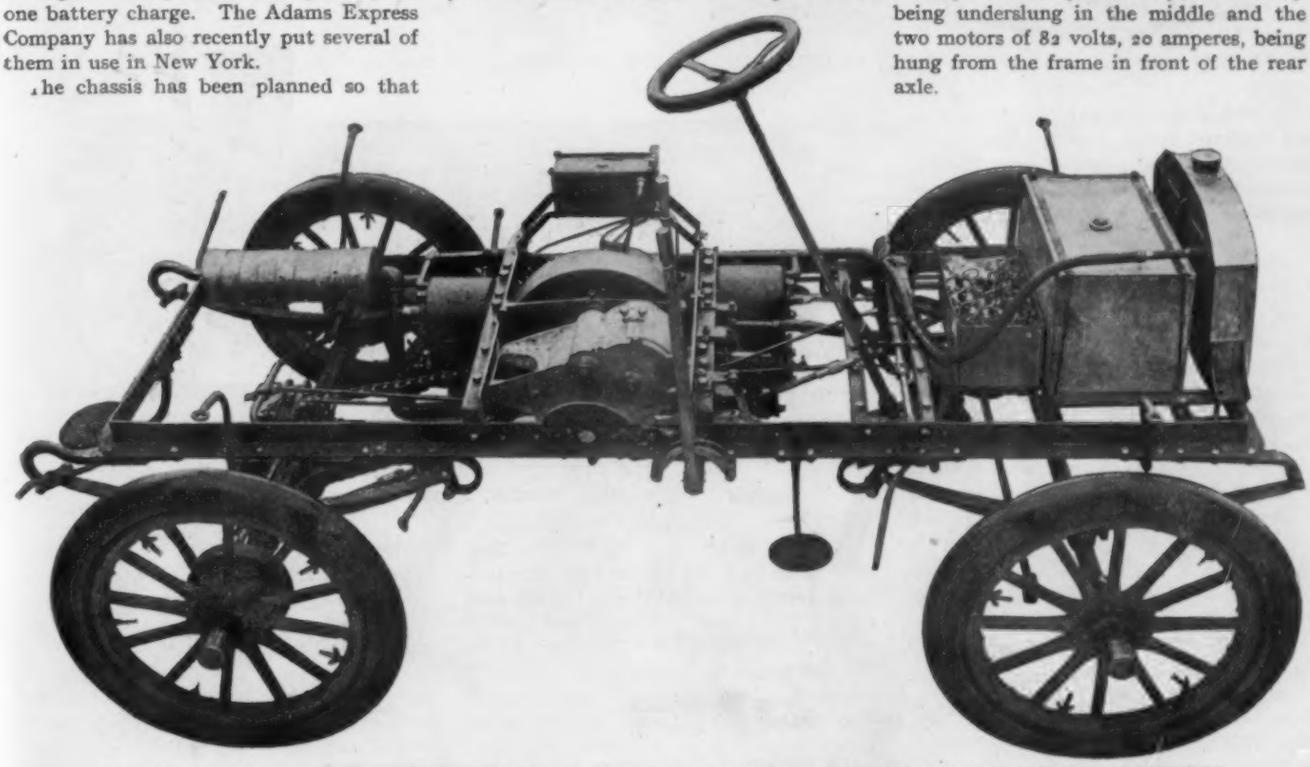


CHASSIS OF 12-HP. "MODEL" RUNABOUT.

"MODEL" 16-HP. TONNEAU WITH FOREIGN TYPE BONNET—WINTER SCENE NEAR THE AUBURN FACTORY.

made by R. H. Macy & Co., of New York, who have used fifteen of this type during the past three or four months with an average of thirty miles each per day on one battery charge. The Adams Express Company has also recently put several of them in use in New York.

The chassis has been planned so that verticle motion of the wheels is possible without transferring the impact of obstructions to the frame of the wagon, every part of the vehicle, so far as practical, being carried above the springs. The chassis has a rectangular platform frame of I-section steel which forms a support for any desired style of body, the battery being underslung in the middle and the two motors of 82 volts, 20 amperes, being hung from the frame in front of the rear axle.



CHASSIS OF 16-HP. "MODEL" TOURING CAR, SHOWING DISPOSITION OF OPPOSED MOTOR AND TRANSMISSION.

Power is transmitted to the wheels through double reduction spur gears and chains. A controller of the horizontal type is used. Braking is accomplished by a powerful brake applied by pressure of a conveniently located pedal. Steering is by wheel. Forty-two cells of Exide battery are used.

The body is easily removable by reason of the suspension of the entire power plant under the frame. The chassis may be thoroughly tested out without body and, if desired, the chassis may be sold without body, enabling the manufacturer to closely approach the ideal of a standardized commercial vehicle of maximum efficiency at minimum cost.

COLUMBIA "MARK LII." ELECTRIC WAGON WITH UNDERSLUNG BATTERY.

Boss Steam Car.

The Boss steam car, manufactured by the Boss Knitting Machine Works, of Reading, Pa., is a new steamer with specially designed burner and equipment to use kerosene by gravity feed. The frame is built up of heavy gauge tubing with 70-inch wheelbase, 54-inch tread and wood wheels with sixteen spokes to each. Water capacity of 35 gallons is provided, and condensers are furnished as an extra.

A 17-inch boiler is used which is subjected to a 700-pound cold water test. The car is driven by a two-cylinder vertical engine provided with friction reverse and throttle levers; is side steering and has double acting brakes controlled by foot lever. The finish of the vehicle is first class with highest grade leather upholstery and all metal parts heavily plated.

The Roux Motorcycle.

This peculiar motor bicycle, shown at the last Paris Salon, is the invention of M. Roux, who places the entire power plant within the front wheel. The illustration, from *La Vie Automobile*, shows the front wheel absolutely spokeless, consisting merely of a heavy steel rim shod with a large leather pneumatic tire. Four pulleys, three small idle ones (the top one being hidden by the cylinder head in the cut) and a larger one at the bottom, keep the rim in such a position that it is perfectly centered around the end of the fork sides. The motor, carbureter and muffler are set inside of this rim. The rim is driven by the large bottom pulley, which is driven by a chain from the motor shaft. The battery and coil are fastened to the frame, while the gasoline tank is placed on the forks.

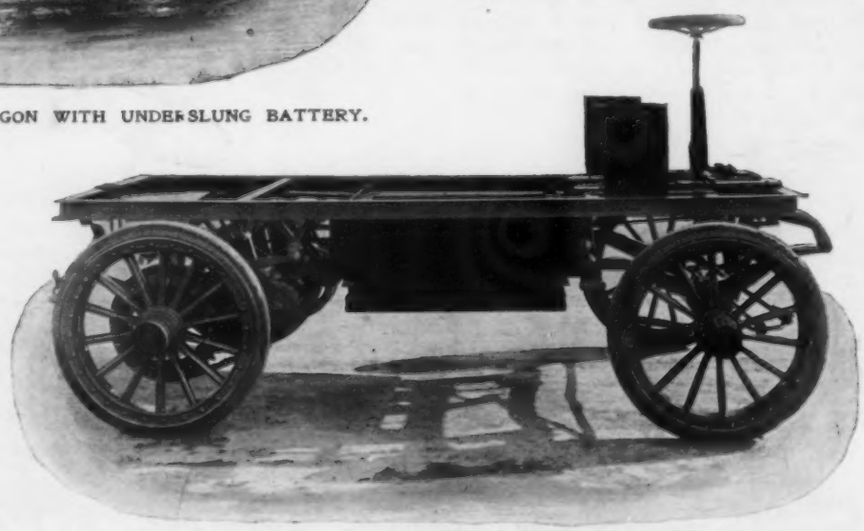
With this device any ordinary bicycle fitted with a free wheel and sufficiently strong can be changed into a motorcycle, substituting the rim and its power plant for the front wheel and attaching to the frame and handle bar the necessary accessories. The driver will be able to watch his motor constantly, and as the greater weight is in front the chances of skidding will be greatly reduced. Another evident advantage is the suppression of the belt.

A Dutch Two-Wheeled Automobile.

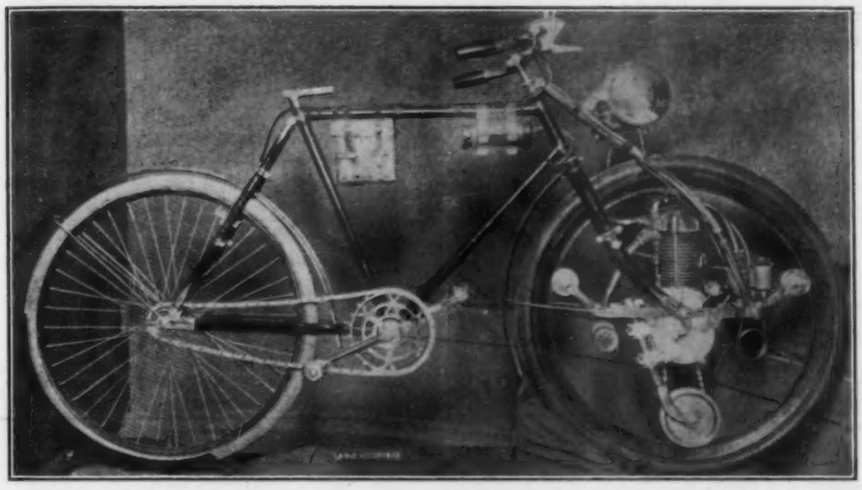
A novel departure from accepted design in motorcycle construction is found in a new machine that is manufactured by M. Meijer, of Velp, near Arnheim, Holland.

The frame, which is double, follows the lines of the straight tube drop-frame bicycle. The engine is mounted vertically in front of the footboard between the double tubes of the frame, with drive to the rear wheel by a twisted rawhide belt. The cane body is mounted on a pair of light elliptical springs, providing a comfortable seat for the rider. The gasoline tank, battery and coil are located under the seat, with all connections carried below the leg space which is left open to give easy access to the seat.

The motor is started with a crank, the belt being loosened by the movement of a hand lever at the right of the seat which controls the movement of the jockey pulley. After the motor is once started the belt is gradually tightened until the rear wheels begin to drive, when the rider mounts and manipulates the machine as easily as he would a small car. If the design works out well in practice it should prove popular, as it will provide many of the advantages of the convenient French type of light car at a small cost.



CHASSIS OF COLUMBIA WAGON, SHOWING CLEAR FRAME FOR BODY.



ROUX MOTOR CYCLE WITH RING-RAIL FRONT WHEEL DRIVE.

FULL COURSE OF AUTO INSTRUCTION BY BUFFALO Y. M. C. A.

Special Correspondence.

BUFFALO, Feb. 6.—Final arrangements are being made for the automobile school to be conducted by the Y. M. C. A. in this city in connection with its evening educational system during the spring. The course will consist of a series of lectures, a number of practical demonstrations and courses in designing and actual repairing and assembling. Present and prospective owners and automobile dealers as well as mechanics are expected to register for the course.

The lectures, which will begin on Thursday, February 18, will be given on successive Thursdays by James H. Massie, M E., superintendent of construction for the Climax Gas Engine Company, a graduate of Cornell University and an experienced automobilist. He will confine his attention to gasoline cars because the gasoline type predominates and because the electric carriage can be understood thoroughly only by electricians.

At the opening lecture an address will be made by William H. Hotchkiss, president of the New York State Automobile Association, who will give a preliminary talk illustrated with stereopticon views of some 1904 cars.

On Saturday afternoons there will be demonstrations of the actual operation of cars, which will be placed at the disposal of the Y. M. C. A. by different makers. This part of the course is considered particularly valuable. It will be open to women.

The courses in drafting and designing and in automobile repair and assembling will be open to men only. Drawing of gas and gasoline motors will be taught by an expert, whose name has not been announced, while the shop course will be directed by a well-known automobile builder.

The object of the association in arranging the drafting and shop course is to provide instruction for the men who may desire to obtain positions in automobile factories or as drivers for automobile owners. Local manufacturers have emphasized the need of such a course, saying there is a constant demand for expert workmen. One manufacturer alone expects to have places for at least twenty-five operators during the coming spring and summer.

Hearing on Hill Bill Postponed.

Special Correspondence.

ALBANY, Feb. 9.—The hearing on the Hill automobile bill which was set for tomorrow has been postponed till next week, when on Wednesday it will come up again. The amendment of the New York State Automobile Association is to be included and the bill reprinted before the hearing.

BOSS KEROSENE-BURNING STEAM DOS-A-DOS.

SIDE AND FRONT VIEWS OF MEIJER WHEEL-STEERING MOTORCYCLE WITH RATTAN SEAT.

THE AUTOMOBILE

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SATURDAY, FEBRUARY 13, 1904.

THE CHICAGO SHOW.

Considered as an exhibition, the Chicago show has proved itself worthy of the name in every respect. Looked upon as an index of the growth of the automobile business and of popular interest in the newer and more powerful types of machines, it has shown marked promise for the industry in a field that so far has been regarded as somewhat uncertain and unpledged.

Just as in Europe the automobile center has been conceded to Paris, so in the United States it has been easy to regard New York as possessing the moving spirit that shall lead in automobilism. For long the New York enthusiast has been the patron of racing. He has been the consumer of the costly importations from French workshops. The New York show has set the styles for the seasons and at the best the great field of the West has been looked upon as having half-hearted interest in the more costly types of cars, and because of this, open to just that missionary work that a great show should inaugurate.

It is unquestioned that the Chicago show has accomplished much of this. Fourth of the Chicago exhibitions, it has been successful beyond any and all of the others. The manufacturer east and west has come forward with the most elaborate machines for a western constituency, these exhibits of a class immune from geographical comparisons and limitations. As a show markedly for the individual buyer, those powerful and expensive constructions could be regarded only as indicative of a new and growing demand for a type of automobile not before regarded as appealing to Chicago and the West.

If even the show front of the exhibition might be questioned, the position of the Coliseum housing the show in a district seemingly set apart for the retail windows of automobile firms would need to be taken in evidence. These show windows in that portion of the city which has come to be the center of the sales district are worthy of any city in the country, and will even bear comparison with the Paris showrooms.

Concerning the detail of the show in its presentation of an automobile picture, it had much of the artistic to recommend it. The factor of roominess and the taste in arrangement of exhibits combined to make the color, lights, the decorations of the immense building, and the well-placed groups of machines into a homogeneous whole which on the surface presented the least technical of atmospheres to the lay visitor.

The fourth Chicago show has been a success beyond any of its predecessors. How much better the fifth annual exhibition is to be is easily within the province of the close observer who, taking into consideration the western field for the automobile, has measured the interest awakened in this last showing for best types of the machine.

NATURE'S MOTOR VEHICLE TEST.

Severe and disagreeable as has been the winter now tediously wearing itself out, to the unalloyed satisfaction of everybody in any way interested in automobiles—including the attendants at the Chicago show this week—it has not been without its good effect. The ice-coated streets on which horses struggled and fell week after week have afforded practical object lessons the results of which will be plainly apparent before next fall. It seems safe to say that the most unusual weather conditions during the last two months have advanced by several years the coming of the day when the supremacy of the motor commercial vehicle over the delivery and heavy draft horse will be generally acknowledged

The progress of the motor delivery wagon and motor truck has been slow in this country, as it has been in Europe, in comparison with the rapid rise into favor of the pleasure automobile. Manufacturers offered them very early in the history of the new industry, but heads of business houses conducted for profit were skeptical of the reliability and economy of the power vehicle—not altogether without reason in the earlier days. But improvements have been made since then, and now there is overwhelming proof from unprejudiced sources that the motor wagon in whatever form is superior to the old and soon-to-be antiquated form of traffic.

Really surprising advance in the introduction of heavy electric vehicles has been made quietly during the last two years, especially in New York City; one concern alone having enjoyed nearly 90 per cent. of the business, mainly through certain features in construction that made possible the fitting to the chassis of any desired type and style of body, and also through the adoption of a business method that removed altogether from the minds of the purchasers any doubt as to cost of operation and maintenance. With these factors known definitely before purchase and with a guarantee of period of life of the batteries, the conservative business man was found willing to invest considerable sums in what heretofore he had looked upon only as a probable costly experiment.

Yet even then the motor wagon was adopted by many houses mainly with a view to its advertising value rather than with any expectation that it would prove profitable, and fantastic bodies were designed to increase its value in that direction. Most of the buyers were extremely doubtful of the service such vehicles would give when the streets were snow and ice bound. This doubt has now been wholly dissipated, as is shown by the interviews published on another page.

We can look forward confidently to a great impetus also in the demand for light gasoline delivery wagons in the big and little cities throughout the country, not excepting even the progressive villages. The last fifteen or eighteen months has so conclusively demonstrated to hundreds of thousands all over the country that the low and moderate priced American pleasure car is capable of negotiating every possible sort of road in all known kinds of weather that the small merchant who is offered a light delivery wagon built on chassis exactly similar to those of the pleasure vehicles which he has observed performing their work regularly day after day, will not hold his progressive instinct in check through doubt of the reliability of the motor wagon. His concern hereafter for a period will be as to the economy of the power vehicle and the ability of the ordinary delivery man to learn to operate it without injury.

A factor not entirely negligible in anticipating the future of the commercial vehicle is the humanitarianism of emancipating the horse from his slavish city life of toil. While the matters of efficiency and economy will appeal strongest to the merchant, thousands of others will lend their moral influence to hurry forward the day when we shall no longer see dumb brutes straining helplessly under the lash and struggling vainly on icy pavements to secure a firm footing. In one day in New York recently following a drizzling rain and a freezing temperature, more than fifty horses had to be shot by agents of a humane society to end their sufferings from injuries resulting from falls.

Although several months distant, the Gordon-Bennett race of 1904 is now engaging the attention of a large number of persons interested in automobiling. Not alone the builders of cars which will be entered in the various eliminating trials, but the German authorities who will have control of the arrangements during the race are bestirring themselves so that nothing may be left undone to have conditions as perfect as human foresight can make them when the great race day arrives. The number of contestants will be greater than in any of the previous events, as several countries never before represented have entered. The nations now expected to compete are Germany, France, United States, England, Belgium, Austria, Italy, Switzerland, and, possibly, Holland. Aside from the sport features of the race a certain commercial pre-eminence attaches to the builder of the winning car, and this is keenly appreciated abroad Our greatest handicap is that our drivers have practically no opportunities for road racing. Any serious and well conducted effort to remedy this condition of affairs should be welcomed by all automobilists who have the best interests of the American sport and industry at heart.

To Decide on St. Louis Run.

The proposed endurance run in June between New York City and St. Louis will probably be decided upon this week. After the Pittsburg endurance contest a number of the members of the N. A. A. M. favored abandoning runs of this kind in the future, believing that further object lessons on this question were not needed. While this is universally recognized, the subject was discussed by the directors of the association during the New York show and a consensus of opinion favored holding a run this year. It is believed that the World's Fair at St. Louis was the strong factor in bringing about a change of sentiment. An endurance run from New York to St. Louis calls for a contest more than 1,200 miles in length which, under favorable weather conditions, would provide a far more interesting and spectacular demonstration than was possible at the last endurance run. The weather and road conditions in June may confidently be hoped to be better than during last October's run—they can't be worse.

Remarkable Massachusetts Bill.

A bill has been introduced into the Massachusetts House of Representatives by Representative Thomas J. Collins, of Boston, on petition of G. Walter Whorton, which prohibits the operating of any automobile which has a seat in front of the driver. The penalty for violation is a fine of $200 or imprisonment for ten days, or both. If the bill becomes a law it will seriously affect the sale of a number of well-known American automobiles which are designed with folding seat to carry extra passengers in front.

CONSTITUTIONALITY OF BAILEY LAW UPHELD.

Appellate Court Decides that Manufacturers and Dealers Must Register and Tag Demonstration Cars.

CASE MAY GO TO COURT OF APPEALS.

The constitutionality of the registration and numbering provisions of the Bailey law, which were successfully attacked in the Court of Special Sessions in New York City last summer, was affirmed by the Appellate Division of the Supreme Court last Saturday in an appeal by the People from the decision of the lower court. It was held by the Appellate Court that manufacturers and dealers are exempted only from the registration of the vehicles they keep for sale or repair or in storage and that if they take them out upon the streets or highways for any purpose they must register and tag them the same as private owners were required to do.

There is, therefore, according to the decision, no discrimination in the treatment of automobile owners or class legislation under the law and no question of its constitutionality.

The case in which the decision was rendered was that of James T. McWilliams, an employe of the American Darracq Automobile Co., who was arrested June 26 last for operating an automobile without a license tag in Central Park, and in the police court was held for trial in the Court of Special Sessions. The Law Committee of the Automobile Club of America decided to make this case a test of the law and retained W. W. Niles, the club counsel, to defend McWilliams.

Mr. Niles interposed a demurrer to the complaint on the ground that section 166, requiring the owners of automobiles to register them with the Secretary of State, which provides that "This section shall not apply to a person manufacturing or dealing in automobiles or motor vehicles except those for his own private use and except those hired out," exempted dealers from displaying a license number on a demonstrating vehicle, and that in consequence not only did McWilliams not violate the law, but that the entire registration and tagging sections were unconstitutional because discriminating between certain persons of the same class. This view of the case was accepted by the court and a verdict for the defendant upon these grounds was rendered on August 18. An appeal from this decision was taken by the People, which appeal was decided Saturday.

The opinion, which was written by Justice Laughlin, with Justices Van Brunt, Ingraham, McLaughlin and Hatch concurring, first recites the facts in the case and gives a summary of the two sections of the law in dispute; namely, Section 166 regarding registration, and 169a regarding the display of a numbered tag. It then continues as follows:

"The theory upon which this law has been declared unconstitutional is that it is class legislation and is in violation of the Fourteenth Amendment to the Federal Constitution. . . . . In the view we take of the statute it is unnecessary to decide whether it would be competent for the Legislature to thus discriminate between dealers and manufacturers on the one hand and private owners upon the other in using automobiles and motor vehicles upon the public roads. It will be observed that manufacturers and dealers are not expressly exempted from the requirements of Section 169a, that tags with numbers shall be attached to automobiles and motor vehicles in use upon the highways. The statute does not require an interpretation that the Legislature intended to permit manufacturers and dealers to operate automobiles and motor vehicles which they have in stock and for sale upon the public highways. It was evidently deemed unnecessary to require the registration of such vehicles as were held in stock for sale or for repair or in storage in automobile barns or stables. The Legislature assumed that there was little danger to be apprehended that such automobiles and motor vehicles would be used upon the public highways in violation of law and it therefore dispensed with the registration thereof. It indulged, however, in the rational assumption that private owners became such with a view to using their vehicles and it required such owner to register his vehicle and obtain a certificate by the owner from the Secretary of State and attach a tag for identification, realizing that this would be the most accurate method of identifying the machines when in use upon the public ways. Then it prohibited the use of the vehicle in the public street without such tag. That prohibition is general and applies to all automobiles and motor vehicles regardless of the purpose for which they are owned or held.

"If the manufacturer or dealer wishes to take a vehicle which he has in stock for sale or for repairs or on storage out upon the public streets and operate it by its own power, he may secure that right by registering it as provided in section 166 and attaching to it a tag with a number thereon corresponding to the certificate.

"It will be observed that even the manufacturer or dealer is required to register any such vehicle that he holds for his own private use or for hire. If he operates an automobile or motor vehicle upon the streets for the purpose of exhibiting it for sale, this would, strictly speaking, be operating it for his private use and he would not be exempted from a compliance with the provisions of Section 166 with respect to the registration of the vehicle because the vehicle would not be within the exception contained therein. These statutes are susceptible of this construction and since

if they should be construed as permitting a manufacturer or dealer to operate the vehicles of this class which he holds in stock upon the highways without a number tag, their constitutionality might well be doubted,—it is the construction which they should receive.

"It follows that the order should be reversed and the matter should be remitted to the Court of Special Sessions with directions to proceed according to law."

CASE MAY BE APPEALED.

Mr. Niles said that the decision was a disappointment to him as it did not directly meet the issue of the constitutionality of the measure which he had raised in the lower court. He stated that the case will now go to trial in the lower court and, in case of an adverse decision there, as may be expected under the construction placed upon the law by the Appellate Division, will be appealed again and the appeal carried to the Court of Appeals.

OPENING OF MOTOR BOAT EXHIBITION IN HERALD SQUARE HALL.

The two weeks' exhibition of launches and boats opened Monday evening in the Herald Square Exhibition Hall, on the ninth floor of the Macy building at Broadway and 34th Street, New York. The recent rapid growth of the industry occasioned by the influence of the automobile, has brought it to a position where it is well able to support an annual exhibition of its own, and the indications are that the present attempt will result in such an end.

The management has succeeded in bringing together from all parts of the country a representative collection of launches and motors, including the ordinary type of service launch with heavy motor now in general use, and also the much talked of "automobile launch" with extremely light hull and high speed motor which promises to be the one striking feature of yachting in the present year.

The exhibit appeals to both classes of launch users—those who wish to go easily and comfortably at moderate speed, and those who are content only with speeds previously deemed impossible in small boats.

The opening night found the exhibit so far from complete that anything like a detailed description of the boats must be deferred until next week. As usual with all shows, many of the exhibits were not in place, and several important ones now on the ocean will not arrive before the second week, the show continuing till February 20.

Among the exhibitors are the Standard Motor Construction Co; Lozier Motor Co.; Babcock, Atwood & Bowen, representing the Gas Engine and Power Co. and Chas. L. Seabury & Co.; Truscott Boat Co.; Newberry & Dunham; Mianus Boat Co.; Fairfield Motor Works; Yacht, Gas Engine and Power Co., of Philadelphia; Fairbanks, Morse & Co.; Cushman Motor Co,; Globe Iron Works; Pierson Boat Co.; Palmer Bros.; Clifton Motor Co.; Isham Boat and Engine Co.; Hasbrouck Motor Co.; Rockaway Motor Co.; Chas B. Durkee; Oldtown Boat and Canoe Co.; Englehardt Collapsible Life Boat Co.; Victor Metals Co.; Carley Life Float Co.; Philips High-Speed Valveless Engine Co.; Bacon Magneto Control Co.; M. A. Cornell & Co.; Wm. Roche, and E. Delafield Wright.

A model of the airship designed by Prof. Dare is on exhibition.

LAUNCH MAKERS ARGUE AGAINST THE GROSVENOR BILL.

Special Correspondence.

WASHINGTON, D. C., Feb. 8.—A large delegation of manufacturers of gasoline engines appeared this week before the House Committee on the Merchant Marine and Fisheries, to protest against the enactment of the Grosvenor bill requiring vessels propelled by gas, fluid, naphtha, or electric motors to be inspected by the Government Steamboat Inspection Bureau and requiring the operators of such boats to be licensed as engineers. This bill has been before Congress a number of times but has always failed of passage.

The principal arguments against the bill were made by E. F. DeBrul, representing the National Metal Trades Association; J. J. Amory, of the Gas Engine and Power Co. and the Chas. L. Seabury Co., of New York; J. N. Schoonmaker, of the Chas. A. Strelinger Co., of Detroit; H. L Sutphen, of the Electric Launch Co., of Bayonne, N J.; and J. E. Audenreid, representing the Pennsylvania Iron Works. They all termed the proposed law class legislation and pointed out to the committee that there was no necessity for its enactment as there was very little danger in the operation of a gasoline engine. To require the operators of these small power boats to be licensed as engineers and to undergo government inspection would cause them needless hardship and would serve no good end. The committee was informed that there were more than 25,000 small power boats in operation in the waters of the United States, and a large number of them would be directly affected by the proposed law.

During the course of the hearing one of the speakers alluded to the fact that the automobilists of the country were being subjected to all sorts of foolish regulations, the effect of which was not only injuring the sale of automobiles but was also causing individual owners a lot of trouble without accomplishing any great good. This prompted General Grosvenor, the author of the pending bill, to make an impassioned assault on the automobile. Among other things he declared that automobiles had killed and maimed many persons, had practically driven the horse from the streets of Washington and other cities, and were not regulated sufficiently. His various statements went unchallenged, as no automobilists were present at the hearing.

Representative Lucking, of Detroit, is leading the fight against the enactment of the Grosvenor bill, and has promised to leave no stone unturned to bring about its defeat.

A NINETY-FIVE-FOOT MOTOR YACHT FOR CLEVELAND YACHTSMAN.

Special Correspondence.

CLEVELAND, Feb. 8.—James Corrigan, a wealthy iron man of this city, is to have one of the largest and finest motor launches on fresh water. The Electric Launch Company of Bayonne, N. J., is building it from its own designs. The boat will be 95 feet over all, 16 foot beam and 4-foot draft. The frames are to be of heavy oak and planking long leaf yellow pine, copper fastened throughout. The raised pilot-house and the long trunk cabin will be of mahogany. The roof of the cabin-house will be arranged for a promenade deck with an awning and accommodations for chairs and settees. The interior will be in mahogany, white and gold. There will be a large private stateroom with double berth for the owner, and eight swinging Pullman berths aft, separated by portieres. When the berths are closed, the space provides a large saloon which will be used for a dining-room.

The yacht will be fitted with a 200-hp. gasoline engine that will give her a speed of between seventeen and eighteen miles an hour. She will carry 2,000 gallons of fuel which will give her a wide cruising radius. An electric light plant will be installed, with storage battery auxiliary power, furnishing electric lights in the cabins and a powerful searchlight on the pilot-house. Two tenders will be supplied, one to be equipped with a 1 1-2 horsepower gasoline engine. The yacht will carry a crew of three men. It will be completed April 15, and will be used on the St. Lawrence River and the Great Lakes.

Mr. Corrigan is an enthusiastic yachtsman and has been actively identified with the sport in this city for a number of years. He formerly owned the ill-fated sailing yacht *Idler* which was wrecked two years ago when three members of Mr. Corrigan's family were drowned. Last year Mr. Corrigan sailed a 70-foot gasoline launch. He is a member of the Cleveland Yacht Club, to whose fleet the new boat will be a valuable addition.

Power-Boat Classes and Handicaps.

The questions of classification ratings and handicap allowances were discussed at the annual meeting of the American Power-Boat Association, which was held at 127 West 43rd Street, New York City, on February 3. A number of delegates

from the clubs in the organization were present and many reports were given of new high speed launches which are being built for use this spring. Under the present rules there is no separate class for high speed launches and provision will be made by the executive committee to include the boats of this new type, the rule, however, not going into effect until autumn

American Representation in Cup Race.

C. Gray Dinsmore, the regular European representative of the Automobile Club of America, will have associated with him for the American representation at the International Cup Race in Germany on June 17, President W. E. Scarritt and Secretary S. M. Butler, of the club. There seems to be some doubt about the personnel of the team. Three cars have been entered for the race, but one or two of these may not be finished in time. Secretary Butler has written to each entrant asking that a report be made to the race committee of the club of the progress that has been made. The Peerless company is said to have three cars almost completed, all eligible under the weight limitations for entry for the race. According to L. P. Mooers, the new cup cars will be a big advance over previous construction by his company and one, two or three cars will be entered if permitted, should the Hewitt or Sampson cars not be able to compete.

Henri Tarman, Henri Tart and M. Teste have been selected by Panhard & Levassor to drive their Gordon Bennett cars in the forthcoming French eliminatory trials.

San Antonio, Texas, is threatened with a six-mile-an-hour automobile ordinance.

CLUBLAND

Marlboro Club to Join M. S. A. A.

Special Correspondence.

MARLBORO, Mass., Feb. 6.—The Automobile Club of Marlboro held its regular monthly meeting last Wednesday and elected new members, bringing the full membership up to forty-four. The club is a live one and all its meetings are well attended and much interest is shown.

The club voted to join the Massachusetts State Automobile Association and also to circulate a petition in support of the Brownlow Bill. President E. G. Hoitt was elected to represent the club on the Board of Directors of the State organization.

Milwaukee Club Election.

At the recent annual meeting of the Milwaukee Automobile Club, officers were chosen for the ensuing year as follows: President, the Rev. J. F. Szukalski; vice-president, Dr. Louis J. Fuldner; secretary, James T. Drought; treasurer, William H. Pipkorn; captain, Arthur H. Anger. The club is prospering and has nearly doubled in membership during the year.

Bridgeport Club Favors Brownlow Bill.

Special Correspondence.

BRIDGEPORT, Feb. 8.—The Automobile Club of Bridgeport has appropriated $50 to contribute to the good roads fund of the Automobile Club of America which is to be used to disseminate knowledge concerning the Brownlow Bill. Following the suggestion of Albert R. Shattuck, members of the club have been urged to address their Connecticut congressmen in behalf of the measure.

A club smoker has been arranged for Saturday evening, February 20, and H. P. Maxim, of the Electric Vehicle Company, has accepted an invitation to speak on the subject of automobiles.

A committee has been appointed to arrange for a renewal of the lease of the club headquarters in the automobile establishment of W. S. Brandegee.

Notes of the Clubs.

The New York Motorcycle Club is considering the proposition of turning over the annual motorcycle contest to the Federation of American Motorcyclists.

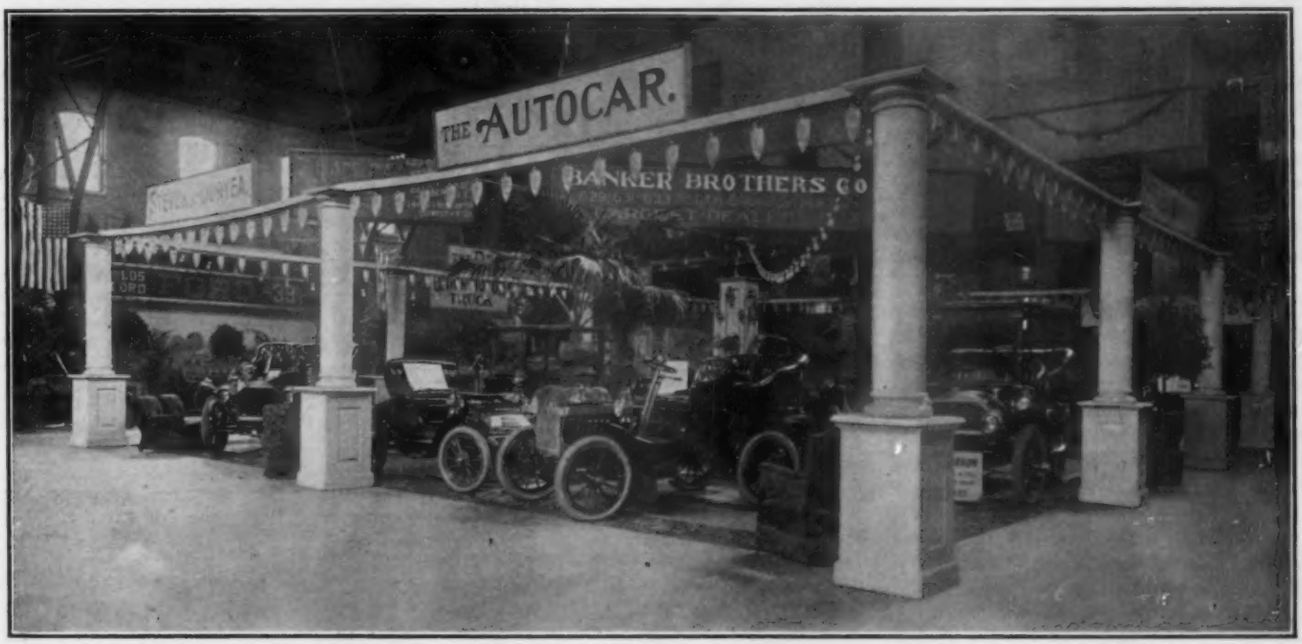
The active membership of the Automobile Club of America has reached the limit of 400 provided in the by-laws; and a waiting list of applicants for active membership has been established.

At the annual meeting of the Colorado Automobile Club, D. W. Brunton was re-elected president. The club was organized two years ago and the present membership numbers 200

The Germantown (Pa.) Automobile Club has applied to the Court of Common Pleas for a charter. On March 1 estimates on the construction of a clubhouse and garage at Carpenter and Green Streets will be invited.

The annual convention of road makers will be held at Hartford, Conn., February 11 to 14, under the auspices of the American Road Makers' Association. Delegates appointed by the Governors of the different States will be in attendance.

Dr. J. A. Chase, president of the Rhode Island Automobile Club, has presented a plan for a joint clubhouse to be maintained by the Rhode Island and Massachusetts Automobile Clubs, half way



CORNER OF THE PHILADELPHIA AUTO SHOW, JANUARY 26-30, SHOWING BANKER BROS.' EXHIBIT.

between Boston and Providence for the accommodation of members. The matter was referred to a committee which will report to the Massachusetts Automobile Club at its next meeting.

Automobile clubs and yachting organizations have on foot a plan to exchange clubhouse courtesies between the city and country clubs. In this way a city club not having a country home can have the privilege of the yachting clubhouse in the country, and *vice versa*. The scheme has already been adopted by the Long Island Automobile Club and the Hempstead Yacht Club. The Brooklyn automobilists will have the rights of the fine shore home of the yacht club, while the yachtsmen will be welcomed at the home of the auto club in Brooklyn. The idea seems to meet with the approval of the different organizations and it is likely before the summer months arrive that a number of other clubs will make the same arrangements.

Liberal Ordinance for Alameda County.

Special Correspondence.

SAN FRANCISCO, Feb. 3.—The board of supervisors of Alameda County, acting upon suggestions from the Alameda County Automobile Club, is about to pass a new ordinance governing the use of automobiles. It is very liberal, permitting machines to be operated at a rate of twenty miles per hour. The old ordinance named fifteen miles as the maximum.

The terms of the new ordinance were arranged at a conference held in the Merchants' Exchange, Oakland, between representatives of the board of supervisors and the Automobile Club of Alameda. The old ordinance required that the operator of an automobile on meeting a team, or a person leading a horse, cow, or other domestic animal, should slow his machine down to a rate not exceeding six miles per hour. Under the new ordinance the driver of an automobile need not slow his machine down unless a signal to do so is given to him by the person driving or leading an animal. At a second signal the automobile operator must bring his machine to a full stop. The Merchants' Exchange has added its recommendation of the new ordinance to that of the automobile club.

Racing Notes.

There are to be seven control stations on the international race course in Germany, as follows: at Uflingen, Weilburg, Limburg, Esch, Koenigstein, Dornholzhausen and Saalburg.

Albert Champion, who recently left the hospital for the first time after his nearly fatal accident at the Brighton Beach race meet last fall, has joined the staff of the Packard Motor Car Co. in Detroit as a demonstrator and will probably drive the Gray Wolf, on which he was hurt, or another Packard racer, on the track next summer.

Walter Christie of New York, contemplates the construction of a 110-horsepower racing car designed on the lines of his front-driven 32-horsepower car with which he made a straightaway mile in 58 seconds.

The match race between Hollander & Tangeman's F. I. A. T. motor boat and Smith & Mabley's *Vingt et Un* has been postponed at the request of the latter firm and the race is now set for June instead of May.

The entry of Smith & Mabley's speed launch, the *Vingt et Un*, for the international motor boat race for the Harmsworth Cup has been forwarded by Secretary Butler of the Automobile Club of America to the Automobile Club of Great Britain and Ireland.

W. H. Pickens is now touring the South with the two Ford-Cooper racing cars (having bought the mate to Barney Oldfield's "999" from Tom Cooper) and has engaged Ed Hausman to drive the Cooper car and expected to get Eddie Bald and Kid McCoy to take turns driving the "999." The tour begins in Savannah on February 13 and will include Daytona and New Orleans, traverse Texas and end in California. Oldfield and Cooper have signed for a similar trip and will often compete against the old cars that won them their position in the auto racing firmament.

Although much has been said and printed regarding the suitability of Virginia Beach, near Norfolk, for straightaway speed trials and races, and the project of holding the elimination trials for the Gordon Bennett race there in April was looked upon favorably because of the greater proximity to New York of Virginia Beach as compared with the Ormond-Daytona course, it is now stated by James L. Breese that the sand at Virginia Beach is soft in spots, and Augustus Post says the receding tide leaves little "gullies" across it. This is a disappointment to northerners, who are anxious to discover an ideal course compartively close to the metropolis.

TWO NEW MODEL GARAGES PLANNED FOR MILWAUKEE.

Special Correspondence.

MILWAUKEE, Feb. 8.—Plans have been prepared and the property secured for two new automobile storage and repair stations here and in a few days ground will be broken and the active work of erection begun. Both the buildings are to be on Broadway, one on the corner of Biddle Street, adjoining the present building of the Bates-Odenbrett Automobile Company, which will erect the new building, and the other between Mason and Oneida streets. The latter is to be built for the C. G. Norton Automobile Company.

The Bates-Odenbrett company's building which is to be 60 x 120 feet, will be ready for occupancy by April 15. The building is to be of stone, brick and iron and will include a modern automobile showroom, repair shop, and reading, reception and lounging rooms for men and women. The plans for the furnishings of the rooms for women are especially elaborate. The building will have its own electric power plant.

The roofs will be supported by arches, leaving a clear floor space. There will be three entrances, two on Broadway to the show and storage rooms and one on Biddle Street to the repair department.

The Norton company asserts that its new establishment will be one of the finest in the West. The building will be entirely of brick, one story and a basement. The roof will be supported by trusses without center supports. This will give space for about 150 machines, and offices and a repair shop of considerable size. The garage will have its own electric plant and a compressed air cleaning plant.

Recent Incorporations.

Auto-Renting Co., New York City; capital, $25,000. Directors: J J. Hickey and J. J. Riley of Mt. Vernon and E. J. Haines of New York.

North Side Auto Co., Indianapolis; capital, $15,000. Directors, S. E. Rauh, F. M. Bachman, Henry Severin, Harry Murphy, Charles Krauss, W. S. Wynn, Robert Keller, Dr. E. D. Clark and Dr. L. H. Dunning.

Buell Cycle and Auto Co., New Haven, Conn.; capital, $2,000; to deal in bicycles, automobiles and motor boats. Incorporators, George A. Pickett, D. H. Buell and Edwin S. Pickett.

Greer Motor Co., Chicago, Ill.; capital, $2,500; manufacturing. Incorporators, Robert Greer, J. H. Greer, Fred Greer.

Gibson-Short Cycle and Automobile Co., Indianapolis; capital, $35,000. Directors, William H. Brown, E. E. Short and Cecil E. Gibson.

Napier Motor Co., Boston; capital, $10,000. President and treasurer, Otto B. Cole. Directors, Otto B. Cole and Hugh W. Ogden, of Boston.

Strong Automobile Mfg. Co., Minneapolis, Minn.; capital stock, $25,000. Incorporators, A. W. Strong, Lucian Swift and J. W. Falconer, all of Minneapolis.

Ansonia Motor Car Co., New York City; capital, $10,000. Directors, F. C. Armstrong and T. B. Townley, of Elizabeth, N. J., and C. I. Scott of New York City.

Whitney Safety Firearms Co., Newport, R. I.; capital, $150,000; to manufacture and deal in firearms, ammunition, general sporting goods, bicycles, automobiles, and other machinery. Incorporators, Norman Whitney, Henry B. Whitney, John D. Johnston, Allan Woodruff, Michael Sullivan, Thomas P. Griffin and Rufus E. Darrah, all of Newport.

Auto-Bike Messenger and Delivery Co.; Rochester, N. Y.; capital, $10,000. Directors, C. E. Percy, G. T. Fries and J. R. Webster of Rochester, N. Y.

The Crest Automobile Company of Cambridge, Mass., has taken out a license under the Selden patent from the A. L. A. M.

News Notes and Trade Items.

E. J. Pennington, of automobile and airship fame, has again been heard from as the head of the Cleveland Motor Co., Cleveland, O.

The H. S. Lane Motor Car Co., of Philadelphia, has secured the exclusive agency for the Decauville cars for Philadelphia and vicinity.

The Fairbanks Company, Broome and Elm Streets, New York, is sole agent for the Goodson igniters, manufactured at Providence, R. I.

The Swedish Auto Garment Company, importers of automobile and hunting apparel, has opened offices and salesroom at 133 W. 38th Street, New York.

Worcester, Mass., now has a new garage located at 40 Exchange Street. It is under the management of Fred. S Wilder, formerly of Station No. 1, on Foster Street.

Louis Jandorf, a veteran bicycle dealer at 127 W. 127th Street, New York, has abandoned his bicycle trade to devote his entire attention to the automobile business.

The Phelps touring car is handled in New York City by E. F. Phelps, at 147 W. 55th Street, and will be represented in Philadelphia by the Keystone Motor Car Co.

Chester C. Boynton, formerly with the Moyea Automobile Co., has accepted a position as salesman with the Standard Automobile Co., 136 West 38th Street, New York.

The Bronx Auto Club, of Bronxville, New York, now numbers nearly forty members, most of whom are physicians who make daily use of the automobile in their practice.

The German and French Automobile Industry, of Philadelphia, Pa , importers of foreign cars, are American representatives of the factory of Adam Opeheim, Runneburg, Germany.

The Steel Highway Track Construction Company of America, 758 Drexel Building, Philadelphia, has issued a descriptive booklet on road-building and the application of their imp oved product.

The following have been elected directors of the Geneva (Ohio) Automobile & Mfg. Co.: Fayette Brown, James Barnett, Dexter B. Chambers, Frank A. Arter, D T. Cheney and Henry Means.

Negotiations are pending concerning a speed launch for Kaiser Wilhelm II, which, if completed, call for the construction of a fast boat to be built after designs by Charles F. Herreshoff, 2nd, of Providence.

The Daimler Mfg. Co., of Long Island City, N. Y., has begun the construction of an American Mercedes touring car which will be shown on completion at the company's garage and salesroom at 12 East 27th Street, New York City.

The Relay Motor Car Company, Reading, Pa., manufacturers of Wyoma motors and transmission gears, is now making preparations for building twenty-five complete gasoline touring cars this season.

The D. E. Foote Rubber Company of Cleveland has removed to a new store at 56 Frankfort Street, that city, where it will have larger space for storing and repairing automobile tires and rubber specialties.

The Jacob Hoffman Wagon Co. of Cleveland is getting out a complete set of trimmings for sliding glass front automobile canopy tops. With these any carriage maker can attach a canopy top to an auto at a low price.

Arrangements are reported to have been completed by Olson & Co. of Butte, Mont., to operate an automobile stage line from Divide to Wisdom in that State, making connection with the train each day for Butte and the South.

Architects plans have been drawn for a large automobile garage to be erected in Washington, D. C., at 14th Street, near R Street. It will be of gray brick, iron and steel, two stories high with elevators and complete modern equipment.

The Covert Motor Vehicle Company of Rochester, N. Y., has recently greatly enlarged its plant and increased its facilities, and will, as a consequence, turn out a larger number of cars than at first intended. The price of the Covert has been reduced from $750 to $650.

George A. Crane who has had charge of the Milwaukee agency for the Knox automobiles, has been appointed general agent for the Knox company and will shortly remove his headquarters to Chicago. His brother, Herbert Crane, formerly of Racine, Wis., will conduct the Milwaukee agency.

Under date of January 22 the White Sewing Machine Co. received a letter from its London office as follows: "We have sold six cars this week, including one to Sir Edward Reed, K.C.B., the eminent naval constructor. This car is to be shown on our stand at the Crystal Palace show."

The police of Paris are making an energetic effort to suppress thieves, poachers and brigands along the banks of the Seine at night. A new high-speed launch has been fitted with a powerful searchlight and this boat, with one previously acquired, will be used to patrol the banks at night.

H. B. Hart, the pioneer bicycle dealer of Philadelphia, who has abandoned the bicycle business and given up his old establishment on Cycle Row, to handle Eldredge automobiles and Racine motor boats, has secured an office in the Odd Fellows' Building, at Broad and Cherry streets, and has taken a temporary show room at 204 Broad Street, almost opposite the Odd Fellows' Building.

A handsome calendar with twelve photographic reproductions of French cars and speed launches has been issued by Smith & Mabley, New York City. The catalogue of Panhard, Renault and S. & M. automobiles and S. & M. launches, which is being now distributed by this concern, is attractively printed and illustrated.

Lewis D. Shoenberg, of Cleveland, O., has recently purchased a 38-horsepower car to which he has had three separate bodies fitted—one for touring, one for road racing, and a third with berths for sleeping. He expects to take a party of friends on a tour of New York State as soon as weather and road conditions will permit.

The large business of the Virginia-North Carolina Wheel Company of Richmond, Va., has been increased by the addition of a department for the manufacture of spokes for automobiles. The company has already built up a big business in this line, and many of the large Northern concerns are purchasing their goods from the Richmond factory.

An automobile line is projected between Poland and Brazil, Ind. This service will probably be put in operation as early in the spring as the roads will permit. The automobile line is intended to take the place of a projected trolley road, the promoters of which have not been active enough to suit the demands of the residents of the two Indiana towns.

The splendid new garage and club house of the Pioneer Automobile Company of San Francisco has been opened for business. It is a large, handsome four-story building in the California mission style of architecture and stands at the southwest corner of Golden Gate Avenue and Octavia Street, facing Jefferson Square, a public park covering an area of four city blocks.

A novel exhibit is projected at the St. Louis Exposition by a manufacturer of farming implements at South Bend, Ind. Among other interesting features of the display will be an automobile plow which will be shown in operation, demonstrating how much faster a furrow can be turned with the new power than with a horse-drawn plow. An automobile harrow will also be shown and a motor wagon which is particularly adapted for use on the farm.

Suit has been filed by A. W. Brand, of Chicago, at Albany, against the State of New York for $30,000 for personal injuries received in an automobile accident that occurred at Syracuse, N. Y , September 14 last, when the machine on which he was riding ran into the Erie Canal. The accident was caused by the hoisting of a drawbridge across the canal at West Genesee Street. J. Grant Lyman of New York City has also sued for $1,220 damages to the machine. The claimants allege negligence on the part of the employes of the Public Works Department of the State, no danger signal having been displayed.

Harry C. Marvel, who was the first sales agent of the Electric Vehicle Company in Boston to occupy headquarters in the new garage of that company on Stanhope Street, at the corner of Trinity Place, has accepted a position with the Pope Manufacturing Company and will have charge of the Boston sales of the Pope-Waverley cars. He has already assumed his duties under the new arrangement.

L. T. Andrews and James A. Keenan, automobile repairers, have taken temporary quarters at 18 Fell Street, San Francisco, pending the fitting up of their new shop, which will be one of the best repair shops west of Chicago. It will be equipped with gear cutters and will have a lathe with lead screw in the metric system. This is the only shop in the West especially fitted to repair French cars.

A company has been formed to build an automobile repository in Indianapolis. The building will be of brick, 93 x 177 feet, and will contain all modern conveniences, waiting room, a complete repair shop, etc. It will be on North Alabama Street, south of 16th, and electric current will be supplied by the Home Heating and Lighting Co. The main floor will have a capacity to store 120 vehicles. The building will be completed about April 1.

The Kanawha Automobile Company of Charleston, W. Va., has been incorporated with $10,000 capital stock for the purpose of selling automobiles and supplies and operating a package delivery and 'bus line. The company is in the market for the purchase of one or more omnibuses using either steam or gasoline for power. Incorporators of the company are as follows: Edwin M. Keatley, W. C. Summers, D. W. Patterson, William Fishback and C. W. Root.

Sutcliffe & Co., dealers in automobiles and sporting goods in Nashville, Tenn., have made an assignment to Peyton N. Clarke for the benefit of their creditors. Mr. Clarke says the liabilities will not exceed $46,000, while an invoice of the stock January 1 showed assets of $57,000. "The firm has been embarassed by too much good business," said Mr. Clarke, after a meeting of the creditors, "and it is hoped that a reorganization will be effected with larger capitalization and the business continued."

The Utah Automobile Company of Salt Lake City, which was organized last August and incorporated with a capitalization of $10,000, has been reorganized and the capital increased to $25,000. Le Roy C. Snow has been made president and will have charge of the sales and advertising departments. William L. Pickard is secretary and treasurer, and George W. Miller is in charge of the mechanical work. The company has also arranged for the erection of a commodious single story garage on Market Street, to be completed by March 1 and to contain a stock of new cars, a repair shop, storageroom and offices.

The Atlantic City (N. J.) Driving Association, which is to build a new trotting track at Chelsea, below the City by The Sea, is seriously considering the advisability of laying down, at the same time, a mile course designed especially for automobile racing. It is believed that such a track could be built at a minimum cost, compared with other locations, and that as the resort is a Mecca for automobilists from the east it would be the means of drawing a class of desirable sportsmen. It is estimated that $150,000 will build both tracks.

The Canada Cycle & Motor Co., Ltd., of Toronto, Canada, has secured large premises at the corner of Bay and Temperance streets, Toronto, which is in the very center of the business section. The building is five stories in height and 85 x 87 feet. The first three floors of this building will be devoted to automobile purposes and will include a first-class showroom, a thoroughly equipped repair shop and capacity for the storage of upwards of one hundred automobiles. Every facility afforded at a first-class garage will be provided.

The name of the Automobile Headquarters on Stanhope Street, Boston, has been changed to The Lewis-Matthews Company, owing to the increasing annoyance of receiving mail intended for concerns in other places that have been organized since the Boston "Headquarters" started four years ago. The composition of the firm remains the same, however, Mr. Matthews being a silent partner and Ralph C. Lewis the active manager. The station is being remodeled and redecorated, the sales department being separated from the garage and repair shop. The company has been appointed agent for Decauville cars.

The DuQuesne Motor Car Company of Buffalo, is removing its plant to Jamestown, N. Y., the Manufacturers' Association of Jamestown having given the company a cash bonus of $5,000 and a plot of ground adjoining the plant of the Straight Mfg. Co., which the DuQuesne company has purchased outright. The plant is splendidly equipped, inventories at $86,000 and includes a water-power dam and rights of 120 horsepower. The company is also given the use, for a term of years, of the Jamestown Racing Park, which is near the plant, for testing purposes. The capital stock of the company which was originally $50,000 has been increased to $300,000. LeRoy Pelletier, the promotor and first president of the company, will have full charge of the business affairs and L. A. Robinson, the designer of the DuQuesne car, will continue as mechanical superintendent. The officers are: John A. Donaldson, of the new company, president; LeRoy Pelletier, vice-president; J. C. Lillibridge, secretary-treasurer, and C. H. Stolzenbach and John B. Uster, directors.

The Shroyer & Dubel Automobile Co. has been formed in Dayton, O., and has rented rooms at 19 and 21 W. Second Street for a first-class garage. The company will handle the Rambler and Ford lines in Montgomery and nine adjoining counties. A full line of sundries will be carried and a well equipped repair department maintained. Mr. Shroyer, one of Dayton's successful bicycle dealers, will continue his bicycle and sporting goods business, devoting part of his time to the automobile business. N. E. Dubel will give practically his entire time to the automobile business.

The Acme Car Co. is now established in its new factory at 8th and Elm Streets, Reading, Pa., and is planning to build 200 or more of its new Acme gasoline touring cars this year. New and improved machinery has been installed and 200 skilled workmen are now employed. The works consist of the main building and four annexes, affording in all 150,000 square feet. In the main building, consisting of four floors and basement, are the machine shop, assembling, painting and trimming departments. Woodworking, blacksmith, forge and automatic machinery are in the annexes. I. D. Lengel is general manager.

Chief Wallace of the Cleveland, Ohio, fire department, is investigating the automobile for use by battalion chiefs of that city. The entire city is covered now by the chiefs with horses, but there are a great number of long runs to the outlying boxes and many fires necessarily gain great headway before they can be reached. The chief attends all downtown fires on the first alarm and all second fire alarms in every part of the city. He has lost much valuable time when having to make exceptionally long runs and believes that automobiles will not only prove economical of time but that considerable money will be saved over the cost of caring for and feeding horses.

The Electric Vehicle Company is bringing through a larger number of the 1904 Columbia 30-horsepower touring car, Mark XLII, than originally had been planned, and announces that the price of the car with standard tonneau body will be $4,000 for the season. Special prices will be charged for cars equipped with canopy tops and for aluminum, limousine or surrey bodies. Many of the orders already booked specify aluminum bodies and canopy tops. There is also a good demand for the surrey style of body. Deliveries will begin in March. The Mark XLI, 24-horsepower Columbia, of Chicago-New York record fame will be sold at $3,500 with standard body. A number of these vehicles are also being equipped with limousine bodies to fill orders. Work on the first lot of new Mark XLIII 12-14-horsepower light gasoline tonneau, listed at $1,750, is well along. The regular body will be larger and somewhat different in style from that shown on the car exhibited at the New York show.